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A TREATISE

ON

FEBRILE DISEASES,

INCLUDING

THE VARIOUS SPECIES OF FEVER,

AND

ALL DISEASES ATTENDED WITH FEVER.

BY

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ERRATA.

Page 2, line 21, for *affections*, read *affection*.

Page 101, line 8, for *dilirio*, read *delirio*, and line 15, for *phrenities*, read *phrenitis*.

Page 208, and elsewhere, for *Miller*, read *Millar*.

Page 240, line last but two, for *affusion*, read *effusion*.

Page 330, line 1, for *XVII.* read *XVI.* and so on in the three following Chapters.

Ib. line 2, for *Histeritis*, read *Hysteritis*.

For "page 339," read "page 337."

Page 367, line 1, and elsewhere, for *Falkconer*, read *Falconer*.

Page 566, line 13, for *vesiculare*, read *vesiculares*.

A

TREATISE,

&c.

PART. II.

OF

SYMPTOMATIC FEVERS.

INTRODUCTION.

WE have now conſidered all thoſe Fevers which deſerve the name of Idiopathic, that is, which are not ſymptomatic of ſome local affection. A local affection attends the eruptive Synochi and Exanthemata, but has no ſhare in producing the fever. And ſuch is the reſemblance of the different genera of Idiopathic Fevers, that it would not perhaps be generaliſing too much to regard the whole as one diſeaſe, their differences rather marking ſpecies than genera.

The remaining orders of Dr. Cullen's Pyrexiæ, namely the ſecond, fourth, and fifth, the Phlegmaſiæ, Hemorrhagiæ, and Profluvia, eſſentially differ from them. In theſe we ſhall find a local affection the primary diſeaſe, and the fever ſo conſtantly proportioned to it, that we can almoſt always judge deciſively of the degree of the local affection by obſerving that of the fever. Hence it is, that the principles, on which the treat-

ment of these diseases is founded, differ widely from those which regulate that of fevers properly so called, and the exanthemata. For these reasons, which were considered more at length in the general Introduction, I have divided Dr. Cullen's Pyrexiæ into two classes, abandoning the term altogether, and using instead of it, the circumlocutions, Febres Idiopathicæ and Febres Symptomaticæ.

Symptomatic Fever was defined, a primary local affection, attended with increased temperature and a frequent pulse.*

In this class are arranged three orders, the Phlegmasiæ, Hemorrhagiæ Febriles and Profluvia Febrilia.

The first of these orders was defined, Symptomatic Fevers, in which the local affection is either an external inflammation, or a fixed pain with derangement of some internal function.

Febrile Hemorrhagies were defined, Symptomatic Fevers, in which the local affection is a flow of blood, not occasioned by external injury.

The definition given of the last order, Febrile Profluvia, was, Symptomatic Fevers, in which the local affections is an increase of some excretion, not naturally red.

Before we enter on this class of diseases, it will be necessary to make some observations on the local affections which form so essential a part of them. Inflammation, Hemorrhagy, and Profluvium. I have treated of their definitions and nosological arrangement in the general Introduction.

Of Inflammation.

Inflammation was defined,† Redness, and swelling with

* General Introduction, p. 28.

† General Introduction, p. 33.

heat and pain. This is a ſufficient enumeration of its ſymptoms. It varies according as it terminates in reſolution, ſuppuration, or gangrene; according as the ſuppuration produces a well or ill conditioned ſore, &c. but of this hereafter.

Of the Cauſes of Inflammation.

All parts of the body, if we except a very few, the cuticle, nails, hardeſt parts of the teeth, and hair, are ſubject to inflammation.

The ſtrong, vigorous, and plethoric are moſt liable to it. A peculiar ſtrength and vigour of conſtitution indeed ſeems independently of plethora to diſpoſe to this diſeaſe. "Thoſe," Dr. Millar * obſerves, "of a thin make, rigid fibres, and a "quick digeſtion, are liable to inflammatory diſeaſes."

Too full a diet, particularly too free an uſe of fermented liquors may be regarded as the chief prediſpoſing cauſe of ſuch diſeaſes. All cauſes which check habitual diſcharges, whether artificial or natural, eſpecially the excretion by the ſkin, and all cauſes which conſiderably increaſe the force of the circulation, prediſpoſe to inflammation; and if applied ſuddenly and to a great degree, may act as exciting cauſes.

Such are the cauſes of inflammation acting on the ſyſtem in general; thoſe which act locally may be arranged under three heads.

1. Whatever increaſes the impetus of the blood towards the part.

2. Mechanical irritation.

3. Chemical irritation, under which are included extremes of temperature.

It is to be recollected that the effects of any temperature are not proportioned to its degree only, but to that and the dif-

* Dr. Millar on the prevailing Diseases of Great Britain.

ference between it and the previous temperature of the part to which it is applied; hence ſudden changes of temperature are apt to excite diſeaſe. There are few cauſes of ſimple inflammation more frequent than ſuddenly warming the hands or feet when chilled with cold.

Irritation will ſometimes excite inflammation, not in the part to which it is applied, but in a diſtant part. Thus we have ſeen in conſidering eruptive fevers, that inflammation of the ſkin is often excited by irritation of the bowels; and in conſidering the phlegmaſiæ we ſhall find this obſervation ſtill more ſtrikingly illuſtrated.

The cauſes of the Phlegmaſiæ are the ſame with thoſe of ſimple inflammation; for in theſe we ſhall find that the local affection excites fever, not becauſe it is of a different nature from ſimple inflammation, but becauſe it is more extenſive, or ſituated in a part of greater importance and ſenſibility.

Of the Nature of Inflammation.

Inflammation forms the principal part of ſo many diſeaſes, that to determine its nature is an object of the firſt importance.

It was obſerved, in ſpeaking of the modus operandi of emetics,* that ſuch is the conſtitution of the animal body, that whatever injures it, excites motions calculated to correct or expel the offending cauſe. This obſervation we found illuſtrated by the operation of emetics, cathartics, &c. In ſuch caſes we can readily trace the motions excited, and the manner in which they act, but cannot trace the manner in which the offending cauſe excites theſe motions.

Any thing greatly offending the ſtomach excites the action of the diaphragm and abdominal muſcles which is neceſſary for

* See Vol. 1. p. 153.

its expulſion, and we can eaſily trace the way in which the action of theſe muſcles produces its effect; but why the offending cauſe excites theſe muſcles and not thoſe of the limbs, for example, we cannot tell. The final cauſe is evident, but the efficient cauſe is involved in obſcurity.

Till we are enabled to trace the intervening events between the irritation of the ſtomach, and the action of the muſcles employed in vomiting, our knowledge of this operation muſt be imperfect. And imperfect, we have reaſon to believe, it muſt ever remain; for we cannot hope that our ſenſes, aſſiſted by all that art can do, will ever detect the finer motions of the animal ſyſtem; the changes which take place in a nerve, for example, when it conveys impreſſions, or obeys the dictates of the mind.

Moſt phyſiologiſts have wiſely admitted that the motions of the nervous ſyſtem are placed beyond our view; and thoſe who have endeavoured to trace them have only ſhewn the futility of the attempt. In pathological enquiries, therefore, the changes of this ſyſtem, on which ſenſation and motion depend, are overlooked; and we confine ourſelves to tracing the cauſes or conſequences of ſuch changes, and when we have ſucceeded in tracing theſe in any of the functions, we conſider ourſelves as having arrived at a knowledge of that function. In this ſenſe we ſay we underſtand the operation of vomiting, coughing, &c. and if we are right, as far as we attempt to go, theſe operations, we have reaſon to believe, can never be better underſtood.

Now if it can be ſhewn that inflammation, like vomiting and coughing, is an effort of the ſyſtem to remove an offending cauſe, and if we can trace every ſtep of this operation with the exception of the changes induced on the nervous ſyſtem, we underſtand the nature of inflammation as perfectly as that of any function of the body.

Let us take a view of the opinions which have prevailed on this ſubject, and ſee how far they are well founded.

Of theſe, four only deſerve attention.

1. That which ſuppoſes inflammation to ariſe from a morbid lentor of the blood clogging the minute veſſels.

2. That which aſcribes it to what has been termed error loci, the groſſer parts of the blood getting into veſſels too ſmall to tranſmit them.

3. That which ſuppoſes a ſpaſm of the extreme veſſels to be the cauſe of this diſeaſe.

And laſtly, that which ſuppoſes it to conſiſt in a morbidly increaſed action of the veſſels of the inflamed part; and this is the favourite hypotheſis of the preſent day, at leaſt with the Phyſicians of this country.

The reader will readily perceive that the principle of the three firſt doctrines is the ſame. In all, obſtruction is regarded as the cauſe of inflammation. It is ſurpriſing, therefore, that none of the ſupporters of theſe opinions thought of trying whether or not obſtruction is capable of producing inflammation. Admitting that the veſſels of a part are obſtructed, it does not follow that an accumulation of blood will take place in the part; the blood may paſs off by anaſtomoſing branches, or the veſſels may reſiſt the diſtending force. If it be found that obſtruction of the veſſels may exiſt without producing any ſymptom of inflammation, theſe doctrines muſt be abandoned.

I paſſed a hot wire through the web of a frog's foot, by which the ſkin about the hole was ſhrivelled, and the veſſels obſtructed, no fluid of any kind being diſcharged. Here an obſtruction was produced, ſurely more than equal to what takes place in many inflammations of ſmall extent, and yet no ſymptom of inflammation followed, every part of the web appearing as pale as before the experiment.

It remains to enquire how far the opinion of inflammation depending on a morbidly increaſed action of the veſſels of the part, is well founded.

Whatever may be the arguments now brought in ſupport of this opinion, there can be no doubt I think reſpecting its origin. It was an inference from the miſtaken opinions which prevailed reſpecting the cauſe of animal temperature.

When phyſicians believed the temperature of the animal body to depend on the friction of the blood againſt the ſides of its veſſels, it was a neceſſary inference that when the temperature of any part is increaſed above the uſual degree, the motion of the blood in that part, the only acknowledged cauſe of animal temperature, is increaſed in the ſame proportion.* But the velocity of the blood cannot it is evident be partially increaſed, except by an increaſed action of the veſſels of the part.†

* "A renixu, pulsu, compactu, vasorumque adhuc meabilium angustatione a tumore obstructorum, attritus fit ingens partium liquidi inter se, in solidum, solidi in illas, inde calor et æstus." Aph. Boerhaavii 382.

† "The phenomena of inflammation all concur in shewing that there is an increased impetus of the blood in the vessels of the part affected; and as at the same time the action of the heart is not always evidently increased, there is reason to presume, that the increased impetus of the blood in the particular part is owing especially to the increased action of the vessels of that part itself." Dr. Cullen's First Lines, par. 239th. "Inflamed vessels seem likewise to acquire a great deal of additional strength, or at least they act with greater energy than formerly, *for the blood is observed to circulate with far greater rapidity through an inflamed, than through an uninflamed part.*" See a paper, by Mr. Moore, on the process of nature in filling up cavities, &c. which obtained the prize-medal given by the Lyceum Medicum Londinense for 1789. It seems surprising

It required no nice experiments, however, to discover, that the circulation is as rapid in many of the cold, as in some of the warm, blooded animals; and consequently, that the above doctrine of animal temperature is erroneous.

With this doctrine, the hypothesis which was founded on it should have been abandoned. But were the doctrine true, the question would still remain: Does the blood move with increased velocity in an inflamed part?

It will hardly be believed that the increased redness of the part has been adduced as an argument in favour of this hypothesis; for although we were assured that this symptom, which can only depend on an increased quantity of blood in the vessels, * arises from their increased action, it would be impossible to shew how this can happen; how a more vigorous contraction of the vessels can enable them to receive a greater quantity of blood.

I need hardly remind the reader of what is generally admitted respecting the structure of the blood-vessels, and the manner in which they assist the heart in supporting the circulation.

Every systole of the heart distends those arteries into which it immediately propels the blood. But the artery is furnished with an elastic coat which resists this pressure, and which, immediately after the impulse which distends it ceases, begins to resume its former dimensions, contracting the diameter of the artery, and thus pressing the blood on in that direction where the least obstacle is opposed to its passage.

But we are acquainted with no body so perfectly elastic as

that physicians should have formed so decided an opinion respecting the state of the circulation in an inflamed part, when it is certain that none had been at the trouble to examine it.

* All agree that in inflammation there is not necessarily any extravasation of red blood.

to return to its former dimenſions with a force equal to that which compreſſed or diſtended it. If then there be no power inherent in the arteries by which the blood may be propelled, but a degree of elaſticity, the impetus given by the heart muſt not only be ſufficient to overcome friction and other cauſes impeding the circulation in every part of the body, but alſo to admit of conſiderable diminution from the loſs it ſuffers in diſtending the blood-veſſels.

It would be improper here to enter on the various arguments which render the opinion of the circulation depending on the action of the heart alone, inadmiſſible; nor is it neceſſary, ſince this opinion I believe is univerſally abandoned. The veſſels, then, are endowed with a power different from mere elaſticity, and there are a ſufficient number of obſervations to leave no room to doubt, that this power differs only in degree from that of the heart, that is, is a muſcular power.

Such are the powers of the blood-veſſels; let us conſider how an increaſed exertion of theſe powers, what has been called a morbidly increaſed action of the veſſels, in any part, can there occaſion a morbid accumulation of blood.

When we ſpeak of a morbidly increaſed action of veſſels, do we allude to the ſtate of their muſcular coat? As this poſſeſſes tranſverſe fibres,* the effect of unuſual contraction muſt be an unuſual diminution of their area. Do we mean by morbidly increaſed action, an increaſe of elaſticity? the conſequence of this can only be a greater tendency in the veſſel to preſerve its mean area.

After each contraction of the muſcular coat, the elaſtic acts as its antagoniſt till the veſſel arrives at the mean degree of dilatation; there is then no farther power of diſtenſion inherent in the veſſel.

* See the Observations and Experiments of Haller and others.

The only power by which the veſſel can be farther diſtended is the vis a tergo; after the veſſel arrives at its mean degree of dilatation, both the elaſtic and muſcular coats are antagoniſts to the vis a tergo, to the force propelling the blood into, and thus tending farther to diſtend the veſſel. If then the vis a tergo becomes greater than in health, the powers of reſiſtance inherent in the veſſel remaining the ſame, or if the latter be weakened, the vis a tergo remaining the ſame, the veſſel muſt ſuffer a morbid degree of dilatation. There appear to be no other circumſtances under which a veſſel can ſuffer ſuch dilatation.

When on the other hand the powers of the veſſel remaining the ſame, the vis a tergo is diminiſhed; or the vis a tergo remaining the ſame, the powers of the veſſel are increaſed, a preternatural diminution of their area is the conſequence.

In the one caſe, the diſtending bears too great a proportion to the reſiſting force; and preternatural diſtenſion is the conſequence. In the other, the reſiſting bears too great a proportion to the diſtending force; and preternatural contraction is the conſequence.

But it is ſaid that an increaſe of the reſiſting force, that is, an increaſed action of the veſſels occaſions increaſed redneſs. Increaſed redneſs can only be the effect of an increaſed quantity of blood in the part. That the quantity of blood in any part may be increaſed, either the area of its veſſels muſt be increaſed, or blood muſt be extravaſated.

Let us for a little advert to the only attempt to reconcile the phenomena of inflammation to the popular doctrine which, as far as I know, has been offered to the public, namely, that by Dr. Fowler of Saliſbury,* in his inaugural

* Previously well known to the medical world by his Essay on Galvanism.

differtation, publiſhed at Edinburgh, in 1793, entitled "Quæ-
" dam de Inflammatione."

Dr. Fowler's attention had for ſome time been turned to the ſubject of inflammation, and his attempt is perhaps as good a one as the nature of the caſe admits of; how far it is ſucceſsful the reader may judge.

In defending his own opinion, Dr. Fowler is led to combat that propoſed about the year 1790, by Dr. Lubbock and Mr. Allen; * but in ſtating this opinion, "arterias inflam-
" matas, quam in ſtatu ſano debiliores eſſe," he appears to me to commit an inaccuracy which runs through many parts of his reaſoning.

According to the theory of inflammation which he combats if I take the ſame view of it with the above gentlemen, it is not neceſſary that the veſſels ſhould be in a ſtate of debility, their action may be more powerful than in health; it is only neceſſary that the proportion which their action bears to the vis a tergo ſhould be leſs than in health. The vis a tergo remaining the ſame, the veſſels before inflammation can take place according to this doctrine, muſt be debilitated, but if the vis a tergo is increaſed, as in Synocha, inflammation may

* It has been asserted, that the opinion here alluded to is of much older date; and that imperfect traces of it are to be found in the works of various writers cannot be denied, but their observations in one passage contradict those in another, so that Dr. Lubbock and Mr. Allen have the merit of having first advanced the opinion in a connected form, and of having separated it from the remains of the old hypotheses. Neither of these gentlemen have, as far as I know, published any thing on the subject, nor made experiments to ascertain the truth of their opinion. In the Medical Society of Edinburgh, I have often heard Mr. Allen, with great perspicuity, defend his opinion, that the vessels of an inflamed part are debilitated, resting his defence on this ground alone, that it is the only supposition by which we can explain the increased redness of an inflamed part.

take place, although the veſſels of the part act as powerfully as in health, or more ſo. But after the inflammation has taken place, as they are ſuppoſed to be preternaturally diſtended, we muſt ſuppoſe them debilitated. We ſhall conſider Dr. Fowler's obſervations nearly in the order in which he makes them.

" Ii, quibus altera opinio maxime placet, contendunt, " auctam actionem arteriarum partis inflammatæ demon- " ſtrari calore immodico, qui nunquam niſi ex curſu ſanguinis " incitatiori naſcitur,* &c. " Calet præter modum, quia " (ut omnia quæ exhibet animal phenomena demonſtrant) " caloris evolutio fere ſemper in ratione eſt arteriarum " actionis." †

It is true that the temperature of the animal is increaſed when the circulation becomes more rapid, in conſequence of exerciſe for example, ſo that the blood is ſent more frequently through the lungs; but where are the phenomena which prove that an increaſed action of the veſſels of any part, increaſes the temperature of that part? The only inſtance to which Dr. Fowler can allude is that of inflammation, for in no other is there a local increaſe of temperature, ſo that he is here begging the queſtion, the very ſubject of diſpute is whether or not the veſſels of an inflamed part are in a ſtate of increaſed action.

I may refer to the obſervations and experiments of Dr. Crawford, Lavoiſier, Girtanner, Haſſenfratz, and almoſt every other late writer on the ſubject, to prove that blood does not evolve caloric in proportion to the velocity of its motion, but to its degree of decarboniſation. ‡

In another place § Dr. Fowler again begs the queſtion by

* Page 9. † Page 24.

‡ Mr. Ellis's Inquiry into the changes induced on atmospheric air, &c. § Page 18.

adducing the increaſed pulſation in an inflamed part as an argument for his opinion.

Dr. Fowler is at much pains to prove, that when the arterial trunks ſupplying any part are debilitated, no inflammation enſues,* h. e. that when the vis a tergo is nearly deſtroyed, (for let it be recollected that in the capillary, not in the larger arteries, we are to look for the proximate cauſe of inflammation, as will preſently more fully appear) inflammation is not the conſequence. Nor can it poſſibly be ſo according to the opinion in queſtion. The action of the capillaries cannot bear too ſmall a proportion to the vis a tergo, when their loſs of power ariſes ſolely from a diminution of the vis a tergo.

Nor are the following obſervations of weight, according to the view I have taken of this opinion.† "Sed præcipue a "ſenſu pulſationis in parte, quo certe indicatur, differentiam "contractiones inter et dilatationes arteriarum (ex qua pul-"ſus percipitur) majorem eſſe in inflammatis quam in ſanis "arteriis."‡ "Nemo ſanus negabit arterias tonſillarum in "cynanche maligna; artuum in rheumatiſmo chronico; "ſcroti in hydrocele; urethræ poſt gonorrhœam multo "debiliores eſſe, quam in cynanche inflammatoria; in "rheumatiſmo acuto; in inflammatione teſticulorum; "vel denique ineunte gonorrhœa: non tamen in illis "ſed in his exemplis tumor et maximus reperitur, et "vaſa ſanguinea turgidiora."§ As the degree of the in-

* Pages 11, 12, 22.

† Whether Dr. Fowler or I take an erroneous view of Dr. Lubbock and Mr. Allen's opinions, they only can determine. But whether the doctrine of inflammation, such as I state it, is just (the only point in which the public is interested) can only be determined by an appeal to facts.

‡ Page 9. § Pages 12 and 13.

flammation is not proportioned to the debility of the veſſels of an inflamed part, but to the diminiſhed proportion of their power to the vis a tergo, the greater the vis a tergo, ceteris paribus, the more conſiderable muſt be the phenomena of inflammation. It is not difficult to explain, therefore, why the ſwelling and other phenomena of inflammation are more conſiderable in the latter, than in the former, caſes.

With reſpect to the argument drawn from inflammation ſeeming ſometimes to reſtore the vigour of debilitated parts,* it may be obſerved, in the firſt place, that the opinion Dr. Fowler combats, ſuppoſes that the larger arteries of an inflamed part are in a ſtate of increaſed action; but this is not a fair argument in favour of either opinion, as we can by no means explain in what way inflammation produces this effect. It cannot be by directly reſtoring the vigour of the blood-veſſels, becauſe we know, that even in a part previouſly ſound, inflammation leaves the veſſels debilitated.

But Dr. Fowler endeavours to ſupport the popular opinion by experiments, as well as inferences from the phenomna of inflammation.

He quotes an experiment of Verſchuir to prove that although inflamed veſſels are contracted in ſome parts, they ſuffer proportional dilatation in others. But Verſchuir's experiment was made on a large veſſel, whereas the proximate cauſe of inflammation exiſts in the capillaries, as is evident, with the aſſiſtance of the microſcope. Beſides we ſhall preſently find that an inflamed veſſel never aſſumes the appearance deſcribed by Verſchuir.

"Major nempe, aut minor portio ſanguinis projicietur in "partes dilatatas arteriæ, prout major minorve portio ſit, quæ "e partibus contractis extrudatur."† This mode of rea-

* Page 13. † Page 15.

ſoning would be juſt, were the veſſels tubes cloſed at both ends; but what prevents the blood, which is extruded from the contracted parts of the veſſels, from moving forward, as we ſhall find from direct experiment it does, when the veſſel acts with increaſed, as when it acts with its uſual, force? The only difference is, that in the former caſe the blood moves with greater velocity. What detains it to occaſion a preternatural dilatation of any part of the veſſel? To account for ſuch a ſtate of the veſſels, we muſt have recourſe to the doctrine of obſtruction, which we ſhall find doubly refuted, by the experiment already related, and the experiments which are about to be laid before the reader.

Dr. Fowler irritated the ear of a rabbit by gently rubbing it; it became red, but ſoon reſumed its natural colour; the irritation was repeated with the ſame effect more than ten times in a quarter of an hour. "Vim contractilem arteria-"rum," he obſerves, "minime exhauſtam fuiſſe frictione, "ut nonnulli volunt: nam ſi fuiſſet, omnino improbabile eſt, "eamdem (admoto iterum ſtimulo) tam cito et frequenter "potuiſſe redintegrari." I need hardly obſerve, that any concluſion from this experiment is begging the queſtion. It was impoſſible to aſcertain how long a time is neceſſary for reſtoring the excitability; but his concluſion on ſeveral other accounts is exceptionable. He ſtill keeps his, as it appears to me, erroneous definition in view, and forgets that inflammation may be excited in any part by ſtimulating the larger veſſels.

He alſo overlooks a fact well known, and which muſt ſtrike every one, in making even coarſe experiments on the circulation, that the farther the veſſels are removed from the heart, the more readily they are debilitated. I have ſeen a degree of friction, which would produce no ſenſible effect on a veſſel of the 20th or 30th part of an inch in diameter, inſtantly

produce ſuch a degree of debility in the capillaries, that in the ſpace of a few ſeconds they were diſtended by the vis a tergo to two or three times their former diameters. Might not the friction in the foregoing experiment then, while it excited the larger arteries, debilitate the capillaries? Nay, the very circumſtance of exciting the larger arteries is ſufficient to debilitate, by overdiſtending, the capillaries; but as ſoon as the friction was removed, the preternatural excitement of the large arteries ceaſing, the capillaries would regain their vigour. If it be only granted that it is poſſible to explain the phenomena in this way, Dr. Fowler's inference, it is evident, is invalidated.

Of his experiment in which the trunk of an artery in a rabbit's ear was laid bare, it is only neceſſary to obſerve, as of the experiment he quotes from Verſchuir, that it does not bear upon the point in diſpute, the proximate cauſe of inflammation having its ſeat in the capillaries, and it being admitted on all ſides that the larger veſſels of the part are in a ſtate of increaſed action.

With reſpect to that with opium on the ears of ſix rabbits; might he not from a paralitic limb with equal accuracy have drawn the concluſion, "Diſtenſionem partis alicujus arteriæ "non ex debilitate tunicæ ejuſdem muſcularis provenire (quo-"niam quo magis debilitata eo minus diſtenta fuit arteria): "ſed ex contractionum vigore et frequentia."* In ſhort theſe experiments only prove what cannot be queſtioned, that in proportion as the vis a tergo is leſſened, the veſſels are leſs diſtended.

Of the colour of an inflamed part, Dr. Fowler obſerves, "Rubet etiam fortaſſe, quia plus ſanguinis in venas propelli-"tur, quam ab eis facile poteſt reduci; actione earum non "pari ratione, ac arteriarum adaucta."† But how it is aſcer-

* Pages 22, 23. † Page 23.

tained that the veins of an inflamed part are more debilitated than the arteries? The phenomena of inflammation having forced Dr. Fowler into this conceſſion, he admits almoſt all that his opponents contend for; if the veins are in a ſtate of preternatural diſtenſion, they muſt be in a ſtate of debility; but he ſays the arteries are in a ſtate of increaſed action. Where is the line of diſtinction between a capillary artery and the vein in which it terminates?* He adds beſides, "Valde porro probabile videtur ruborem, magna ſaltem ex "parte, deberi vaſis lymphaticis ſanguine jam turgidis."† The colourleſs are a principal part of the capillary arteries. They cannot admit the red particles without being preternaturally diſtended. And conſequently, without being debilitated.

But there are ſurely more direct and ſimple means of determining the queſtion than thoſe adopted by Dr. Fowler. It is only neceſſary in order to aſcertain whether inflammation conſiſts in an increaſed action of the veſſels, to induce ſuch an action, and obſerve whether inflammation is the conſequence. Having adapted the web of a frog's foot to a microſcope, I now and then, during ſome minutes, obſerved the velocity of the circulation which continued, as far as I could judge, the ſame. I then wetted the foot with diſtilled ſpirits, and in a few ſeconds obſerved the blood in all the veſſels moved with a greatly increaſed velocity, which, as I conſtant-

* If the reader will take the trouble to view through the microscope by transmitted light, the edge of a fish's fin, he will see the red capillary arteries running into their corresponding veins, and forming with them small arches, arranged with great regularity, in which, from the degree to which it is necessary to magnify the part, the globules of the blood seem to move with astonishing velocity, presenting an appearance striking and beautiful beyond, perhaps, any other which the microscope affords.

† Page 23.

ly kept the web moiſt with ſpirits, continued as long as I obſerved it, ten minutes or a quarter of an hour. But during no part of the time could I perceive the ſlighteſt ſymptom of inflammation, either with or without the microſcope. The veſſels, inſtead of appearing redder and more turgid, were evidently paler and ſmaller than before the application of the ſpirits. I farther increaſed the velocity of the circulation by throwing on the web the concentrated rays of the ſun from the ſpeculum of the microſcope, and ſtill with the ſame effect.

Is it not a fair inference from what has been ſaid, that the opinions hitherto maintained reſpecting the nature of inflammation, namely, thoſe attributing it to obſtructing lentor, error loci, ſpaſm, and increaſed action of all the veſſels of the part, are unfounded? Let us now conſider how far the opinion which aſcribes it to the power of the capillaries bearing too ſmall a proportion to the vis a tergo is correct. If it is proved to be ſo, the foregoing opinions are doubly refuted; and with reſpect to the laſt of theſe, as it has been ſhewn that where increaſed action of all the veſſels of a part is preſent, inflammation is not; if it can be ſhewn that where inflammation is preſent, increaſed action of all the veſſels is not, the inference will ſurely be concluſive.

An inflammation had been excited, I do not know how, in the web of a frog's foot; having applied it to the microſcope, I found the veſſels of the part greatly dilated, and the motion of the blood extremely languid. In ſeveral places, where the inflammaion was greateſt, it had ceaſed altogether. It was at once evident, on obſerving the part through the mimicroſcope, that where the inflammation was greateſt, the veſſels were moſt diſtended, and the motion of the blood was ſloweſt. Nor did I, in one inſtance, obſerve the alternate

contractions and dilatations ſuppoſed by Dr. Fowler to be eſſential to inflammation.

The diſtenſion of the veſſels, which in the healthy ſtate admit only the colourleſs parts of the blood, was apparent; for in the inflamed parts a much greater number of veſſels admitted the red particles than in the ſound, and the interſtices of the red veſſels appeared more opake, probably from the enlargement of innumerable ſmall veſſels, ſtill too ſmall to admit the groſſer parts of the blood.

While I was viewing the inflamed web it occurred, that the inflammation might be removed by ſtimulating its veſſels, which would afford an additional proof of the opinion before us.

With this view I wetted the inflamed web with diſtilled ſpirits, at the ſame time throwing upon it the concentrated rays of the ſun from the ſpeculum of the microſcope. The blood, in all the veſſels except in thoſe of the moſt inflamed part, began to move with greater velocity, and in proportion as this happened, their diameters were diminiſhed, their interſtices became leſs opake, and the redneſs of the part was evidently leſſened.

After I had deſpaired of reſtoring action to the veſſels of the moſt inflamed part, I ſaw the blood begin to move ſlowly in a veſſel which ran directly through the middle of it. It ſoon acquired a conſiderable velocity, and on taking a ſuperficial view of the part through the microſcope, the courſe of this veſſel appeared like a ſtreak of a lighter colour through the middle of the inflamed part.

As I had not in this experiment, obſerved the inflammation from its commencement, I repeated it, with the aſſiſtance of the Rev. Mr. Boraſton, on a ſmall fiſh (the lampern).

We found that expoſure to the air produces a degree of inflammation, evident to the naked eye, in the fins and tail of this fiſh. On viewing the former through the microſcope,

we obſerved the circulation become more languid, and the veſſels enlarge as the inflammation came on. The motion of the blood in the moſt inflamed veſſels at length ceaſed altogether.

By gentle friction and applying diſtilled ſpirits, we repeatedly ſucceeded in accelerating the motion of the blood, and in proportion to the velocity of the circulation, the veſſels became evidently paler, the deeper red returning as the circulation became more languid.

On roughly irritating a part of the fin where there was no inflammation, the part peing pale and the circulation as rapid as natural, the motion of the blood was for a ſecond or two wholly interrupted, (Mr. Boraſton obſerved the part while I irritated it) the force I uſed having compreſſed the veſſels. The vis a tergo, however, ſoon forced the blood into them, and this experiment having been repeated ſeveral times, both Mr. Boraſton and myſelf ſaw the now debilitated veſſels of the parts which had been irritated, gradually dilated by the blood propelled into them, till the veſſels having acquired many times their former dimenſions, the parts appeared highly inflamed. The motion of the blood at the ſame time became extremely languid, and in the moſt diſtended veſſels ceaſed altogether. Some, even of theſe laſt, we ſucceded in exciting to action, and in proportion as the motion of the blood was accelerated, the veſſels became paler, the inflammation being evidently diminiſhed. In theſe experiments there was no extravaſation of blood, except in one inſtance, in which the veſſels were ſo roughly irritated as to wound ſome of them.

The foregoing experiments having been made on cold blooded animals, to obviate any objection which might hence ariſe, it was neceſſary to repeat them on an animal of warm blood.

The ear of a very young white rabbit ſeemed from its

Fig. 1.

Fig. 2.

Fig. 3.

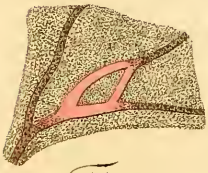

Fig. 4.

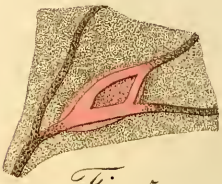

Fig. 5.

J. Rai[illegible], Worcester.

tranſparency the moſt proper ſubject for ſuch experiments. It was accordingly ſubmitted to the microſcope, with every advantage of light that could poſſibly be obtained, but the endeavours, both of Mr. Boraſton and myſelf, to diſtinguiſh the circulation with ſufficient accuracy, were fruitleſs. I therefore made a ſmall opening through the ſkin and muſcles of the abdomen, through which, by the ſtruggles of the animal, a portion of the inteſtines and meſentery were ſoon protruded. I then brought part of the latter within the field of the microſcope, and gently irritated it with the point of a pair of forceps, while Mr. Boraſton, who has been much accuſtomed to the uſe of the microſcope, and to delineate the objects it preſents, obſerved the effects; the account of which I give in his own words, with engravings from the drawings he was ſo kind as to favour me with, repreſenting the different ſtages of inflammation from its commencement to its height. That the reader may be aſſured that Mr. Boraſton's account is wholly unbiaſſed, it is proper to remark, that till after he deſcribed to me what he had obſerved in this experiment, he was unacquainted with the object I had in view in making it.

" The large arteries and veins were too opake to admit of " my diſtinguiſhing the motion of the blood, but in the " ſmall veſſels, which were more tranſparent, the circula- " tion was eaſily obſervable, and I perceived the globules of " the blood moving along with great rapidity, but not in " ſufficient quantity to give a red colour to the veſſels. The " appearance of a ſmall portion of the meſentery on its " firſt examination, is given at fig. 1.

" After a few minutes expoſure to the air, the veſſels be- " came viſibly enlarged, and in ſome parts aſſumed a reddiſh " colour, while the velocity of the blood was proportionably " diminiſhed.

" As ſoon as a part of the meſentery, which lay within

" the field of obſervation, and appeared almoſt colourleſs, " was irritated with the point of a ſmall pair of forceps, a " red ſpot appeared, as in fig. 2. In a few ſeconds it in- " creaſed in ſize, the adjacent parts of the veſſels were " diſtended, and, the current of blood becoming leſs rapid, " was for ſome diſtance ſlightly tinged with a red colour, as " repreſented in fig. 3.

" This enlargement of the veſſels gradually extended till " the part preſented the appearance of fig. 4. The circula- " tion was at this time extremely languid, and at length was " not diſcoverable at all. When, in this laſt ſtage the mo- " tion of the blood was entirely ſtopped, a reddiſh ſhade was " ſeen to have diffuſed itſelf over thoſe parts of the mem- " brane contiguous to the inflamed veſſels: ſee fig. 5."

The reddiſh ſhade here mentioned, was evidently owing to the irritation and diſtenſion having produced a ſlight rupture of ſome of the veſſels, by which a ſmall quantity of blood eſcaped.

It appears then, from the foregoing experiments, that the ſtate of the capillaries in an inflamed part is that of preternatural diſtenſion and debility. That of the larger veſſels may be aſcertained without the aid of the microſcope. Unaſſiſted by glaſſes we readily perceive that they do not ſuffer a ſimilar diſtenſion, and the increaſed pulſation of the arteries ſufficiently evinces their increaſed action. Nor is this increaſe of action ſo obſcure as to be observed with difficulty; I have often, in inflammatory affections of the jaw, applied the finger to the external maxillary artery, both where it paſſes over the bone, and after it aſſumes the name of labialis, and in rheumatic affections of the head to the temporal arteries, and perceived them beating with unuſual force. The reader will find authors obſerving, that an unuſually ſtrong beating in

the arteries indicates that inflammation, if not present, is about to begin in the parts supplied by them.

It is to be observed, that, although inflammation, as was evident from several of the foregoing experiments,* begins in the capillaries; if it continues, the circulation in the smallest vessels being obstructed by their debility, those immediately preceding them will soon begin to be distended, and consequently debilitated, so that, in inflammations which have lasted long, the vessels preceding the capillaries, in the course of circulation, as well as the capillaries themselves, are distended. Thus when the lampern was first exposed to the air, the inflammation in the fins and tail assumed the appearance of a slight blush, in which it was difficult with the naked eye to discover any vessels. But after some time had elapsed, vessels of a considerable size, were seen creeping through the inflamed parts. It is evident that this cannot go very far, because when the vessels preceding the capillaries have lost their power, the circulation is no longer in any degree supported in the latter, and gangrene soon ensues.

When the larger arteries are debilitated, and consequently distended, in the first instance, the disease which may be termed turgescence, or partial plethora, is of a nature very different from inflammation. In this case there is little or no accumulation of blood in the capillaries, as appears from their being pale or only slightly turgid, the vis a tergo, from the debilitated state of the larger vessels being too weak to occasion preternatural distension in them. They, therefore,

* Particularly from viewing through the microscope the fin of the lampern, and mesentery of the rabbit, while exposure to the air was exciting inflammation in them.

more or leſs perfectly, retain their power, and as long as the larger veſſels can ſupply them with blood preſerve the circulation, ſo that the ſtates of turgeſcence and inflammation are oppoſite. In the one caſe, the action of the capillaries is weak, compared with that of the larger veſſels; in the other, the action of the larger veſſels, compared with that of the capillaries. The juſtneſs of this diſtinction will, I think, appear more fully as we proceed in conſidering the phenomena of inflammation. On the difference of theſe ſtates ſeems to depend for example, all the difference between the cold apoplectic, and the furious phrenitic.

In the latter we find on inſpecting the brain, a general redneſs in the parts affected, indicating diſtenſion of the capillaries; in the former often little or none of this appearance, but an evident diſtenſion of the larger veſſels.

The difference between what is called active and paſſive inflammation ſeems to depend on the degree, in which the arteries, ſupplying the vis a tergo to the debilitated veſſels, are excited.

We ſhall find that, in the cure of inflammation by reſolulution, in proportion as the debilitated veſſels are excited to action, the action of the larger arteries abates, and the inflammation is cured as ſoon as the proper balance is reſtored between the larger arteries and the capillaries, although the veſſels are upon the whole in a ſtate of greater debility, than previous to the attack of the diſeaſe. And that ſuch is the caſe appears among a variety of more direct obſervations, from this conſideration alone, that when the inflammation is of ſuch importance and extent that the increaſed action of the larger veſſels extends to the heart, ſo that the inflammation is attended with general increaſed action of the vaſcular ſyſtem; we obſerve that, as the inflammation yields, the general excitement ſubſides, and that when the inflammation is

removed, the whole ſyſtem is left in a ſtate of greater debility than before the diſeaſe.

In ſhort, inflammation ſeems to conſiſt in the debility of the capillaries followed by an increaſed action of the larger veſſels, and is terminated as ſoon as the capillaries are ſo far excited, and the large arteries ſo far weakened by the preternatural action of the latter, that the power of the capillaries is in due proportion to the vis a tergo.

The ſymptoms of inflammation, we have ſeen, are redneſs, ſwelling, increaſed temperature and pain.

It appears from what was ſaid above, that it is ſo difficult to account for the increaſed redneſs of an inflamed part by the popular doctrine, that this ſymptom alone ſeems ſufficient to invalidate it. According to the opinion we have juſt been conſidering, the increaſed redneſs is a conſequence of inflammation, too evident to require any comment. We ſhall preſently have occaſion to conſider why the redneſs is of the florid kind, and aſſumes a purpliſh hue, where there is a tendency to gangrene.

To account for the ſwelling of an inflamed part by the commonly received hypotheſis, it is aſſerted that inflammation is always accompanied by effuſion into the cellular ſubſtance, for it is impoſſible even to conceive how a more vigorous action of the veſſels can occaſion their general dilatation. Of this mode of explaining the ſwelling, it may, in the firſt place, be obſerved, that it has never been ſhewn that any degree of effuſion neceſſarily attends inflammation; but admitting that it does, the ſwelling ſhould be white as in anaſarca, not red, for we certainly know that there is no effuſion of red blood. Beſides, on examining an inflamed part through the microſcope by tranſmitted light, it is at once evident that

its increaſed ſize is, at leaſt in great part, occaſioned by veſſels turgid with red blood.

Nay, on the common hypotheſis, it is even difficult, as Dr. Fowler confeſſes,* to account for the pain of an inflamed part, which is doubtleſs the conſequence of the preternatural diſtenſion of the capillaries, and which is often pulſatory correſponding with the pulſation of the larger arteries which, being in a ſtate of increaſed excitement, tend at every contraction farther to dilate the capillaries, the ſenſibility of which is increaſed by the unuſual accumulation of arterious blood, for the whole blood of an inflamed part, we ſhall find, in what is called active inflammation, is arterious. The pain remits as the blood becomes venous, which only happens in proportion as a tendency to gangrene ſupervenes.

The increased temperature appears to be no leſs a neceſſary conſequence of the debility of the capillaries. This ſymptom which we have reaſon to believe firſt ſuggeſted the popular opinion, now that the old hypotheſis reſpecting the cauſe of animal temperature is refuted, is wholly inexplicable upon that opinion. It ſeems impoſſible to conceive how an increaſed action of the veſſels of a part can occaſion an increaſe of its temperature.

To thoſe who are acquainted with the late chemical diſcoveries reſpecting the cauſe of animal temperature, it is almoſt ſuperfluous to point out why debility of the veſſels of a part, and conſequent accumulation of blood in it, is attended with increaſed temperature.

As animal temperature ſeems to be chiefly † ſupported by

* P. 24.

† Many of the secreted fluids having a less capacity for caloric than the blood, secretion must be regarded as one, though probably a very inferior source of animal temperature.

the change of the blood from the arterial to the venous ſtate, by which its capacity for caloric is leſſened, and as this change is conſtantly going on, wherever there is an accumulation of arterial blood, there muſt alſo be an increaſe of temperature.

It may be urged as an objection to this, and at firſt ſight it appears a conſiderable one, that if the velocity of the blood in an inflamed part be much diminiſhed, it will not be prepared for the evolution of caloric, ſince it is not ſent through the lungs ſo frequently as blood ſupplying parts where the circulation is more rapid, and we know that it is chiefly * in the lungs that it is prepared for this process. But it appears from a variety of obſervations, that although the temperature of an inflamed part is increaſed, any portion of its blood muſt evolve leſs caloric than the ſame quantity of blood in a healthy part.

The experiments of Dr. Crawford, Dr. Fordyce, Mr. Hunter, and others, prove that in proportion as the temperature is increaſed, the evolution of caloric from the blood is diminiſhed; and, that when the blood is raiſed to a degree, but a very little higher than the natural temperature, it ceaſes altogether. Whatever, therefore, be the accumulation of blood in any part, no more caloric can be evolved than is ſufficient to raiſe the temperature to this degree.

Beſides, although the blood continues to evolve caloric till it arrives at this temperature, yet each portion conſtantly evolves leſs, the nearer it approaches to it.† To place what is here ſaid in a clearer point of view, let us ſuppoſe that a quantity of blood as 49, evolves a quantity of caloric capable

* It has been found by experiment that the blood undergoes the ſame change, though in a leſs degree, on the ſurface of the body as in the lungs.

† See the experiment of Dr. Crawford, by which he ſhews that the higher the temperature in which the animal is placed, the leſs caloric is evolved from the blood.

of raiſing the temperature of the part to 98°, and ſuppoſe 100° the higheſt temperature in which blood evolves caloric, then, if this part, inſtead of being ſupplied with a quantity as 49, be ſupplied with a quantity as 50, the temperature of the part will not be increaſed to 100°, which ought to be the caſe, making allowance for the increaſed ſize of the part, if each portion of blood evolved the ſame quantity of caloric as when the temperature was at 98°. But the temperature of the part being increaſed we ſhall ſuppoſe to 98° 30′, each portion evolves leſs caloric. Then ſuppoſe the quantity of blood as 60, and that this quantity evolves caloric ſufficient to raiſe the temperature to 100°, it is then evident that, although the temperature of the part is raiſed, each portion of the blood evolves ſtill leſs caloric than when the temperature was 98 30′. It is alſo evident, that after the temperature is increaſed to 100°, that is, as high as it can be raiſed by the blood, the only effect of every freſh portion of blood accumulated in the part, will be to diminiſh the quantity of caloric ſupplied by every other, by ſupplying part of that which raiſes the temperature to 100.

From all which it is evident, that the greater the quantity of blood accumulated in any part, the leſs is the waſte of that principle, whatever it be, by means of which caloric is evolved, and therefore that, if it receives a leſs ſupply of this principle, it alſo requires a leſs ſupply of it. The waſte of this principle in the whole inflamed part is greater than it was when the part was ſound; but the waſte of it in any particular portion of its blood is leſs. But it is only in proportion to the waſte of this principle, that the blood aſſumes the venous colour; hence the florid appearance of an inflamed part.

Were this a proper place for ſuch diſcuſſions, it would be

eaſy to ſhew that the late experiments of Mr. Ellis,* throw additional light on this ſubject. They ſet aſide ſome of the moſt prevalent opinions reſpecting the office of the lungs, and conſequently, reſpecting the proceſs by which the capacity of the blood for caloric is increaſed in this organ, and the additional caloric is ſupplied.

It appears from ſome experiments of Mr. Hunter, on the temperature of inflamed parts, that it is much lower than, from what we perceive by the ſenſe of touch in external inflammations, we ſhould be inclined to ſuppoſe. Mr. Hunter found that it did not at any time exceed the temperature at the heart, ſo that, according to theſe experiments, inflammation did not produce a greater evolution of caloric than is capable of raiſing parts at ſome diſtance from this organ, but not immediately expoſed to the influence of the air, about one degree. He made his experiments on various animals, of different temperatures. According to theſe experiments, then, the additional caloric evolved in an inflamed part, making allowance for its increaſe of ſize, is only one in 97 or 98. Now if we ſuppoſe the quantity of blood in an inflamed part only double of that in the ſound part, (and I have no heſitation in ſaying, from what I have obſerved with the aſſiſtance of the microſcope, that it is often many times as much) the waſte of that principle by which the blood evolves caloric muſt be diminiſhed about one half, or ſo nearly one half, that the difference may be overlooked.

It ſeems probable, however, that Mr. Hunter's experiments were not quite accurate, we know that the blood is capable of evolving caloric at a higher temperature than that ſtated by him; but this allowed, the above ſtatement is

* Mr. Ellis's Treatise on the changes induced on atmospheric air, &c.

nearly accurate, the blood certainly ceasing to evolve caloric at a temperature a few degrees higher.

Admitting that the temperature may be raised eight degrees, the statement will then be thus: a quantity of blood as 1, gives 98: as 2, gives 106. In the latter instance the same quantity of blood supplies little more than half the quantity of caloric, that is allowing for the increased size of the part.

But the quantity of blood in an inflamed part is at least six times that in the sound part. Then supposing the size of the part doubled, we shall have the following proportions.

The quantity of blood multiplied by 6.

The size of the part by - - - - 2.

The proportional quantity of blood therefore multiplied by - - - - - - - - - - 3.

Thus we have a quantity of blood as 1, evolving caloric sufficient to raise the temperature of the part to 98°; and a quantity of blood as 3, raising it to 106°.

According to this, a very rude,* but I believe, moderate statement, the waste of the prineiple by which caloric is evolved from the blood in an inflamed part, is about three times less than in the same part when sound; so that we readily account both for the increased temperature and arterial colour of the blood, although the rapidity of the circution is greatly lessened.

But may not the rapidity of the circulaton, it may be said, be so much lessened as not to be compensated for in this way?

* It is evidently impossible in this case to arrive at perfect accuracy, as we can never determine exactly how much the quantity of blood, or size of the part, is increased. All that can be looked for is, to be assured that we do not assume too much. There is every reason to believe, that the quantity of blood in an inflamed part is often more than six times that which circulates in it while sound.

When the circulation ceaſes altogether, as in the moſt inflamed parts in the foregoing experiments, when conſequently there can be little or no ſupply of that principle by which caloric is evolved from the blood, what then preſerves the increaſed temperature and florid colour of the part? The increaſed temperature and florid colour then diſappear; the part aſſumes a purpliſh hue, and ſoon becomes gangrenous.

One ſymptom of inflammation ſtill remains to be conſidered, which is not indeed mentioned in the definition, as, however remarkable in many caſes, it is often diſtinguiſhed with difficulty, namely, the increaſed pulſation of the larger arteries of the part; and in the Phlegmaſiæ, of the heart and whole arterial ſyſtem.

The final cauſe of this ſymptom is ſufficiently evident; as the inflamed veſſels are debilitated, an increaſe of the vis a tergo is at once a means of promoting the circulation in the part, and ſtimulating the debilitated veſſels to action. Thus we find, that wherever the vis a tergo is much diminiſhed, the circulation in an inflamed part is apt to fail altogether. We ſhall find indeed that gangrene is often the conſequence of the vis a tergo being too great, and conſequently overſtretching the veſſels of the inflamed part; ſo that a principal object in the treatment of inflammation is to regulate this power.

Here it may be objected, that increaſing the vis a tergo muſt always, by farther diſtending the debilitated veſſels, tend to increaſe the inflammation. It certainly appears, from what has been ſaid, that inflammation may ariſe either from a debility of the capillaries, or an increaſed vis a tergo. If from the latter cauſe, it can only be cured by diminiſhing the vis a tergo, which is leſſened in proportion as the excitability of the larger arteries is diminiſhed by their exceſſive action, or as we diminiſh it by means we are immediately to conſider.

When the inflammation arifes from the debility of the capillaries, the vis a tergo, it is true, alfo fometimes becomes too powerful, but are we not often obliged to have recourfe to means which increafe it, to bark and wine? And would not means to increafe the vis a tergo be neceffary in all cafes of inflammation which originate from debility of the capillaries, did not the nature of the fyftem itfelf fupply them? If the veffels of an inflamed part can no longer be excited to due action by the ufual vis a tergo, the moft evident means of exciting them is an increafe of this ftimulus, on which their action at all times depends. Increafing the vis a tergo, certainly muft farther diftend, but whether that farther diftenfion farther debilitates, or excites to action, will depend on the degree of excitability which remains in the veffels.

The next ftep is to enquire into the efficient caufe of the increafe of the vis a tergo, but here our inquiry is neceffarily bounded by an obfticle which I have already had occafion to confider.*

The increafed vis a tergo may in fome meafure depend on the increafed ftimulus applied to the larger veffels, by the impediment to the paffage of the blood through the debilitated capillaries. But when more diftant veffels, and particularly when the whole fyftem is affected, we cannot attribute it to this caufe, efpecially when we reflect that the flighteft inflammation of an important vifcus, the ftomach for inftance, will excite fever, while a very extenfive inflammation in the fkin or mufcles is often unattended by it. We are forced therefore, for an explanation of thefe facts, to look to the nervous fyftem. But to trace the changes which here take place in it, and the manner in which thefe excite the larger arteries in inflammation, is as impoffible as to trace the changes produced

* See the 4th and 5th Pages of this Volume.

in it by an emetic, and the manner in which they excite the action of the abdominal muſcles, and diaphragm. Neither in the caſe of vomiting nor inflammation can we detect the changes induced on the nervous ſyſtem; but if what has been ſaid be juſt, we underſtand the nature of the one, as well as that of the other.

I might now ſhew in what manner the operation of the remote cauſes is explicable on the doctrine of inflammation we are conſidering, and conſequently tends to ſupport it. But when we recollect, that it appears from the foregoing experiments, that whatever diminiſhes the action of the capillaries of the part occaſions, and whatever increaſes it tends to remove, inflammation, the manner in which moſt of the remote cauſes act is too evident to require any comment.

If inflammation ariſe from the diminiſhed proportion of the power of the capillaries to the vis a tergo, it will, it is evident, be moſt apt to ſupervene under the three following circumſtances. 1. In a ſtate of plethora, becauſe then all the veſſels are overdiſtended, and conſequently any cauſe tending farther to diſtend any of them, whether it be a cauſe debilitating them, or increaſing the vis a tergo, will be more felt than in health. 2. In a ſtate of general excitement, becauſe then the vis a tergo is every where ſtrong, and conſequently apt to occaſion diſtenſion of the veſſels wherever any degree of debility occurs. 3. In a ſtate of great general debility, becauſe then the vital powers in any part are more eaſily impaired than in health. Theſe are the ſtates of the ſyſtem, it has been obſerved above, which are found to prediſpoſe to inflammation. In the firſt and ſecond the inflammation is generally of that kind, which has been termed active, the vis a tergo is conſiderable, the larger arteries being readily excited to increaſed action. In the laſt, it is what has been termed

paſſive inflammation, the larger arteries, in proportion as the ſyſtem is debilitated, being leſs readily excited.

The greater the general debility, the greater, it is evident, muſt be the partial debility before inflammation can take place, becauſe, however debilitated the veſſels of any part may be, inflammation will not ſupervene if the vis a tergo is debilitated in the ſame proportion; hence in very debilitated ſtates of body inflammation ſoon runs to gangrene, as happens in the inflammations ſo readily excited in typhus, &c. Nay, in caſes of extreme debility an injured part runs to gangrene almoſt without any ſymptom of inflammation, the vis a tergo being too feeble to diſtend the veſſels, however much debilitated.

Of the Terminations of Inflammation.

The moſt common terminations of inflammation are, Reſolution, Suppuration, and Gangrene.

Of the firſt there is little to be added to what has been ſaid. We have ſeen in the foregoing experiments that, in proportion as we ſucceed in exciting the capillaries of an inflamed part, we relieve the inflammation. When an inflammation is cured by reſolution, that is, without the deſtruction of any of the parts it occupies, the vis a tergo has ſucceeded in reſtoring the proper action of the capillaries. Reſolution is often promoted by an effuſion from the inflamed veſſels, for when the veſſels are ſo much debilitated by diſtenſion that the only effect of the vis a tergo is farther to diſtend them, there is no hope of exciting them to action without diminiſhing the volume of their contents. Sometimes a veſſel gives way, and the inflammation terminates by hemorrhagy, when this does not happen, the fluid diſcharged is often ſerum or coagulable lymph. If the inflammation has its ſeat in a

ſecreting organ, its ſecretion is generally increaſed, and ſometimes, particularly on ſecreting ſurfaces, the fluid diſcharged we ſhall find is a true pus, for it will appear that the formation of pus is not always attended with a deſtruction of parts. Whether the termination by a ſecretion of pus,* the texture of the parts remaining entire, deſerves the name of ſuppuration or reſolution, it is of little conſequence to enquire. It belongs to the latter according to the ſenſe in which I uſe the terms.

The reſolution of inflammation is ſometimes promoted by a diſcharge, not from the part itſelf, but ſome other, often from a neighbouring ſecreting organ, ſomtimes, particularly where the whole ſyſtem is affected, by a diſcharge of blood in conſequence of the rupture of veſſels in ſome of thoſe parts, where they are moſt numerous and delicate, the internal nares, lungs, &c.

When inflammation terminates by ſuppuration, there is a deſtruction of a certain portion of the inflamed part, in conſequence of which a cavity termed an abſceſs, is formed, which from the firſt is filled with pus, the quantity of which increaſes in proportion as the cavity enlarges.

It has been a prevalent opinion, that pus is nothing more than ſerum diſcharged during the inflammation, and changed by ſtagnation. It is now generally admitted, however, that the experiments of Sir John Pringle,† and M. Gaber,‡ at one time regarded as concluſive, do not warrant the inferences of theſe writers.

* We shall presently have occasion to consider the properties of this fluid.

† The Appendix to Sir John Pringle's work on the Diseases of the Army.

‡ Miscell. Taurin. vol. ii.

M. Brugman, in the firſt ſection of the ſecond chapter of his Puogenia, has aſcertained that the ſediment from the ſerum is not the ſame with purulent matter. " Nec juvat unum alte-
" rumve prædicatum habuiſſe commune, aut externo habitu
" quodammodo convenire. Quid enim inde, nonne et cre-
" mor lactis varia cum pure communia habet? Utrumque
" album eſt viſcidum blandiſſimumque."

In the ſecond ſection, Brugman compares pus with the coagulable lymph of the blood, in the third with the buffy coat, in the fourth with the muſcular fibre, in the fifth with fat; and from all his experiments concludes, " Naturam, corrup-
" tione vel partium qualiumcumque putredine, tanquam me-
" dio in creando pure, non uti." This inference is confirmed by the obſervations of Mr. Home,* who made a very concluſive ſet of experiments on this ſubject.

He found pus formed by a bliſtering plaiſter in twenty-four hours; by means of the microſcope he from time to time examined the diſcharge while it was being changed from a colourleſs fluid into pus. In another experiment he found that pus is formed by irritating the urethra in the ſhort ſpace of five hours, and that in half an hour the diſcharge begins to aſſume the purulent appearance.

He alſo found that it has not this appearance, when it is firſt poured out, but acquires it while it remains on the inflamed ſurface, and that this change takes place as readily, although the matter diſcharged be removed while it ſtill remains colourleſs, provided the proper temperature be preſerved, as when it remains on the part. It is promoted by expoſure to the air.

Mr. Hunter was led, from the phenomena of inflammation to regard pus as a ſecreted fluid. He found veſſels formed in

* A Treatise on the Properties of Pus, by Everard Home, Esq.

extravaſated blood and lymph, and ſuppoſes that in the extravaſated lymph, which precedes the formation of pus in wounds, a ſyſtem of veſſels is formed for the ſecretion of this fluid.

Mr. Home adduces ſeveral facts to countenance this opinion. In performing the operation for ſtrangulated hernia, he obſerved the inteſtines ſmooth and poliſhed, an inflammation ſupervened and ſpeedily proved fatal, and the body was opened within twenty-four hours after the operation. On various parts of the inflamed inteſtines, whoſe ſurface the day before had been uniformly ſmooth, there were found ſmall maſſes of extravaſated lymph in which veſſels were formed. Pus, he obſerves, is more readily formed by ſecreting ſurfaces, on the ſkin for example and in the urethra, than in the body of a muſcle. Many proofs of the tendency of ſecreting ſurfaces to form pus will occur in conſidering the Phlegmaſiæ. The part in which pus is about to be formed aſſumes a more vaſcular appearance, that is, more of the appearance of a gland; and pus bears much reſemblance to ſome ſecreted fluids, particularly milk and the pancreatic juice.

Independently of theſe reaſons, which Mr. Home juſtly conſiders as favourable to the opinion, if it can be ſhewn that pus is different from any of the component parts of the blood, and that neither theſe nor the ſolids are by any ſpontaneous change convertible into pus, the only opinion which ſeems to remain is, that pus is a ſecreted fluid. We have no other proof of the nature of many ſecreted fluids, for the ſecretion of which the glandular ſtructure is at leaſt as obſcure, as in the caſe of ſuppuration?

But the manner in which pus is produced is of leſs conſequence than a criterion to diſtinguiſh it from other fluids, which in ſome caſes, we ſhall find, is an object of the firſt importance.

Chemical analyſis, it is probable, will never enable us to diſtinguiſh pus with ſufficient eaſe to render the diſtinction uſeful Moſt animal ſubſtances, when chemically analiſed, give very ſimilar reſults. Other means of diſtinguiſhing it have therefore been looked for.

M. Brugman,* Mr. Darwin,† and others indeed have attempted to diſtinguiſh it in the former way. To determine, however, with certainty the preſence of pus, by their criteria, ſuppoſing them accurate, requires more experimental nicety than is poſſeſſed by the generality of practitioners, The moſt uſeful teſts, as far as I am capable of judging, are thoſe propoſed by Mr. Hunter :‡ Its coagulation by ſal ammoniac, and globular appearance through the microſcope. If to theſe we add ſome of the moſt remarkable of its other properties, we ſhall ſeldom be at a loſs to diſttinguiſh it.

The following is the ſelection made by Mr. Home. Pus is of the conſiſtence of cream, its colour is whitiſh, it has a maukiſh taſte. When cold it is inodorous, when warm it has a peculiar ſmell. Examined by the microſcope it conſiſts of ſemi-opake globules, and a tranſparent colourleſs fluid, which is coagulated by ſal ammoniac. Pus may be evaporated to dryneſs without coagulating. Its ſpecific gravity is greater than that of water. It does not putrify readily. It is not readily diffuſed in cold water. In warm water it is readily diffuſed, and remains diffnſed after it cools.

It is a property of pus that it ſeparates readily from the ſore, diſcovering granulations on the places it covered.

Mucus is the fluid from which it is of moſt conſequence to

* Brugman's Puogenia.

† Experiments determining a criterion between mucilaginous and purulent matter, by Mr. Charles Darwin.

‡ Mr. Home's paper, just alluded to.

diſtinguiſh pus, which may, for the moſt part, be readily done by the foregoing properties. With reſpect to the teſt moſt commonly employed for this purpoſe, derived from the ſpecific gravity of the two fluids, it is very fallacious. The ſpecific gravity of the mucus of thoſe cavities to which the air is not admitted, is greater than that of water,* and even in thoſe to which the air has free acceſs, it becomes ſo, if the mucus is allowed to ſtagnate, by which its thinner parts are abſorbed, It is not uncommon, as I have often obſerved, for mucus expectorated in the morning, when it has lain, during the night, in the trachea and its branches, to ſink in water; and on the other hand, when pus, which is ſpecifically heavier than water, has entangled ſmall globules of air, which frequently happens in that which comes from the lungs, it will remain ſuſpended in water. †

From the other animal fluids, which bear a reſemblance to pus, Mr. Home points out the following means of diſtinguiſhing it.

From chyle it differs in its globules being larger, and in its not coagulating by expoſure to the air and a high temperature.

The globules of the pancreatic juice are ſmaller than thoſe of pus.

Solutions of animal ſubſtances contain flakes inſtead of globules, or at the ſame time with globules.

The globules of milk are nearly of the ſame ſize with thoſe of pus, but much more numerous. Milk coagulates by runnet; pus does not. Milk contains oil and ſugar which are not found in pus.

Pus is diſtinguiſhed from the diſcharge of ill-condi-

* Mr. Darwin's paper just alluded to.

† "Corroſive ſublimate coagulates mucus but not pus." Mr. Darwin's paper.

tioned ſores, by the latter, when examined by the microſcope, being found to contain a flaky matter; and from the diſcharge of bliſters, by this containing neither flakes nor globules.

It has been the opinion of ſome, that pus may be formed without previous inflammation. This opinion Mr. Home combats, and obſerves, that the matter diſcharged where there had been little or no previous inflammation, differs materially from true pus. Inſtead of being globular, it has a curd-like appearance, and contains flakes.

The formation of proper pus ſeems to depend much on the ſtate of the circulation in the part, and in the ſyſtem in general. The author juſt mentioned found that, cet. par. pus is more apt to degenerate the farther it is from the heart, and relates a ſtriking inſtance, in which a cauſe, affecting the whole ſyſtem, produced at one time a ſudden alteration in the diſcharge of the ſores, in no leſs than twenty patients. From a ſudden change of weather, inſtead of a well formed pus, coagulable lymph was ſpread over their ſurface like melted tallow, adhering to it with ſuch force that it could not be ſeparated without injury. Few have long attended hoſpitals without having occaſion to make ſimilar obſervations.

The diſcharge from ill-conditioned ſores is very various. Inſtead of coagulable lymph or a flaky diſcharge, they often pour out a thin ichorous matter, which, examined with the microſcope, is found to contain few or no globules. It is often mixed with blood, probably in conſequence of its eroding ſome of the ſmall veſſels.

Mr. Home made ſome experiments to determine whether true pus, as ſome have ſuppoſed, is capable of eroding the animal ſolids, the reſult of which is, that the purer the pus, the leſs of this property it has, and that the pureſt pus is a very mild fluid.

When ſuppuration commences in an inflamed part, the pain and redneſs generally abate, the temperature falls nearer to the healthy degree,* and the throbbing becomes more ſenſible. In the phlegmaſiæ we ſhall find the commencement of ſuppuration indicated alſo by certain ſymptoms affecting the ſyſtem in general.

The matter of an abſceſs is either abſorbed or diſcharged, if it is well conditioned, the cavity is obliterated either by its ſides growing together, or by its being filled up by an operation of nature, termed granulation, from the new parts appearing in the form of ſmall red grains. When this proceſs is moſt favourable, the granulations are of a florid red colour, and proceed in a regular manner till the cavity is accurately filled, its edges (if the matter of the abſceſs has been diſcharged externally) being even or nearly even with the ſound ſkin.

The cavity of an abſceſs is never filled up with matter exactly ſimilar to that which was deſtroyed, often, however, with ſuch as is capable of performing its functions. Thus, the matter formed in wounds of the ſkin, tendons, ligaments, bones, and ſome other parts, performs the functions of theſe parts; and ſenſation has ſometimes been reſtored through a nerve which had been divided. The matter formed in wounds of muſcles or glands appears to be wholly incapable of performing the office of theſe parts. †

The laſt of the more common terminations of inflammation is gangrene. Under Dr. Cullen's ſeventh genus, (Phlogoſis) he gives the following definition of it.

* When, however, the matter is confined by the less yielding parts of the body, the symptoms often do not abate much till it is discharged.

† See Mr. Moore's paper on the filling up of cavities, &c.

" Poſt phlogoſin, pars livens, mollis, parum ſenſibilis, ſæpe cum veſiculis ichoroſis. "

Such is the appearance which precedes mortification; the circulation fails, the veſſels are obliterated, or an ichorus and bloody matter runs from their relaxed extremities. Mortification, or as it is termed by medical writers, ſphacelus, is defined by Dr. Cullen,

" Poſt grangrænam pars nigricans, flaccida, facile lacera-
" bilis, ſine ſenſu vel calore, et cum fœtore carnis putridæ;
" vitio celeriter ſerpente."

It happens, however, eſpecially in thoſe caſes where gangrene comes on without much previous inflammation, that the mortified part aſſumes a different appearance, becoming dry and hard, as, for example, in the ſphacelus produced by cauſtic. It has then been termed necroſis, or the dry gangrene. As in the caſe of ſuppuration, gangrene in the phlegmaſiæ is attended with a change in the ſtate of the general ſymptoms, which will preſently be conſidered.

The milder the ſymptoms, the better is the chance of the inflammation's terminating by reſolution. When it is of the puſtular kind and does not readily yield to proper remedies; or when erythematic, if unuſually obſtinate and deep ſeated, there is reaſon to believe that it will terminate by ſuppuration. When the ſymptoms are very violent, eſpecially if the inflammation is of the erythematic kind, we have reaſon to fear gangrene.

Reſolution is always a favourable termination. Suppuration alſo, for the moſt part, is favourable, if the inflammation be external and the habit good; in internal inflammations it is generally unfavourable. Internal gangrene is always fatal. It is only when the gangrene is external that any means can avail, and then they often fail.

The ſteps by which inflammation terminates in gangrene are ſufficiently obvious from what has been ſaid. By degrees, the debilitated veſſels wholly loſe their power, and the part becomes ſubject to the laws of dead matter. The proceſs of ſuppuration is more complicated; and between the inferences from the experiments which have been related reſpecting the ſtate of the veſſels in an inflamed part, and thoſe afforded by Mr. Home's experiments on the formation of pus, there is a chaſm which muſt be filled up by future obſervation. It appears from what has been ſaid, that when the capillary veſſels of any part remain for a certain length of time in a ſtate of debility and diſtenſion, the part begins to ſecrete a fluid which becomes pus; but whether this fluid is ſecreted by a new action of the capillaries, or, which ſeems more probable, as Mr. Hunter ſuppoſes, by a new ſet of veſſels formed in the diſeaſed part, we cannot tell. We are alſo unacquainted with the proceſs by which the diſeaſed parts are removed in the formation of abſceſs. It is probable that this proceſs is alſo performed by a new ſet of veſſels, which, as the ſecretion of the purulent fluid goes on, make room for it by the abſorption of the now uſeleſs parts. We cannot ſuppoſe that theſe parts are melted down and aſſimilated into its own nature by the powers of this fluid; becauſe we find, that pus, with all its properties, may be ſecreted by inflamed ſurfaces without occaſioning any loſs of ſubſtance, and it appears from experiments of Mr. Home, above alluded to, that it does not poſſeſs the property of eroding the ſolids. Theſe topics open a fruitful and intereſting field of enquiry. By patient obſervation, and the aid of powerful glaſſes, it is not improbable that the whole proceſs of ſuppuration might be unfolded.

Some have ranked ſchirrus among the terminations of inflammation. "The ſchools," Dr. Cullen obſerves, have generally

" marked a fourth turmination of inflammation, which is by a " ſchirrus, or an indolent hardneſs of the part formerly affected " with inflammation. This, however, is a rare occurrence, and " does not ſeem to depend ſo much on the nature of inflam- " mation, as upon the circumſtances of the part affected. " It is in glandular parts chiefly that ſchirroſity is obſerved, " and it is probably owing to the parts readily admitting ſtag- " nation of the fluids. I have obſerved that inflammation " ſeldom induces ſchirrus, but that this more commonly " ariſes from other cauſes; and when inflammation ſuper- " venes, which it is ſooner or later apt to do, it does not ſo " commonly increaſe as change the ſchirroſity into a kind of " abſceſs. From theſe obſervations it does not ſeem neceſ- " ſary to take any further notice of ſchirrus as a termination " of inflammation."

Other terminations, or rather conſequences of inflammation will be noticed as we proceeed in conſidering the phlegmaſiæ, depending, like ſchirrus, on the ſtructure of the part, as palſy or rigidity of the muſcular fibres, opacity of the cornea, &c.

Of the Treatment of Inflammation.

As ſimple inflammation is generally a ſlight diſeaſe, conſiderable inflammations, though external, being always accompanied by fever, it will not be neceſſary to enter particularly on its treatment, which indeed will ſufficiently appear from what will be ſaid of the treatment of the phlegmaſiæ.

The means which promote the reſolution of inflammation may be arranged under two heads:

1. Thoſe which leſſen the volume of fluid diſtending the debilitated veſſels by directly abſtracting part of it, by occaſioning a diſcharge from, or an accumulation of blood in, ſome neighbouring part, or by diminiſhing the vis a tergo.

2. Thoſe which ſtimulate the veſſels of the inflamed part.

How well the operation of theſe means correſpondond with the foregoing doctrine of inflammation, need not be pointed out. It is true, that, did inflammation depend on a morbidly increaſed action of the inflamed veſſels, it would be relieved by abſtracting part of the fluid which ſupports this action. But how ſhall we on this ſuppoſition explain the effects of aſtringents and other ſtimuli applied to the inflamed part? Theſe, it has been ſaid, exhauſt the excitability of the inflamed veſſels, and thus leſſen their action. But it appears from the foregoing experiments, that their effect is that of increaſing the action of the inflamed veſſels, and that it is only in proportion as they have this effect, that they relieve the inflammation.

After what has been ſaid of inflammation, a very few obſervations on the other local affections of ſymptomatic fevers, hemorrhagy and profluvium, will be ſufficient. The experiments which have been related, appear alſo to throw light on the nature of theſe affections.

Of Hemorrhagy.

The effuſion of red blood is generally the conſequence of rupture, either from external violence or increaſed vis a tergo; hence the frequency of hemorrhagy in ſynocha, and in active inflammation. In the latter, the local debility at the ſame time rendering the veſſels more ſubject to rupture and increaſing the vis a tergo, ſome veſſel at length gives way, the diſtenſion is relieved, the veſſels recover their tone, and the inflammation ceaſes. Hence we may ſee why inflammation is cured by a ſpontaneous hemorrhagy from the part; and why

more or leſs inflammation often precedes what is called active hemorrhagy; the increaſed vis a tergo before it occaſions rupture, neceſſarily occaſioning more or leſs diſtenſion. Thus the only difference between active hemorrhagy and inflammation is, that in the former a veſſel gives way, the flow of blood relieving the diſtended veſſels in the ſame way that artificial blood-letting from the part is found to do.

The vis a tergo previous to hemorrhagy ſometimes diſtends the larger veſſels of the part inſtead of the capillaries, and then the ſymptoms of congeſtion, not of inflammation, precede the hemorrhagy, the patient complaining rather of a ſenſe of fullneſs and diſtenſion, than of heat and pain in the part from which the blood is about to flow.

Active hemorrhagies then, are ſpontaneous evacuations of blood which relieve an inflammation, or what has been termed congeſtion, and in proportion as the hemorrhagy is profuſe, the inflammation or congeſtion, we ſhall find is more perfectly relieved.

Paſſive hemorrhagy is only a greater degree of that ſtate which we term paſſive inflammation. When the veſſels of a part, we have ſeen, are greatly debilitated at a time when the vis a tergo, from general feebleneſs, is much below the healthy degree, but ſtill ſufficient to diſtend the veſſels of the debilitated part, paſſive inflammation enſues; that is, that kind of inflammation in which the local ſymptoms, as well as general excitement, are inconſiderable, the vis a tergo not being ſufficient to diſtend the veſſels to the degree which occaſions the pain, temperature, and other ſymptoms of active inflammation.

But when the relaxation of the veſſels is extreme, the blood oozes from their extremities, preventing its accumulation in the part, and conſequently the ſymptoms of inflammation. Thus in bad forms of typhus, any irritating cauſe readily excites languid inflammation of the ſtomach, inteſtines, &c.;

but in extreme caſes of typhus, inſtead of inflammation, dark coloured blood oozes from the ſides of theſe cavities.

Of Profluvium.

If the relaxation is chiefly in the colourleſs veſſels, and particularly in the exhalants, which frequently happens, becauſe the farther veſſels are removed from the heart, they are the more eaſily debilitated, the diſcharge is colourleſs; and this diſcharge increaſing as the vis a tergo increaſes, prevents inflammation by preventing diſtenſion of the capillaries.

But ſhould any cauſe debilitate the red veſſels of the part, the ſmalleſt of which ſupply the vis a tergo to the colourleſs veſſels, the colourleſs diſcharge muſt ceaſe, from the want of the vis a tergo which ſupports it; and the ſmaller red veſſels, now debilitated will be diſtended by the vis a tergo which impels the blood into them, and inflammation enſue; as often happens from cold in gonorrhœa, coryza, catarrh, &c.; for it is to be remembered, that the heart ſupplies the whole vis a tergo only to the arteries, into which it immediately propels the blood, the vis a tergo in all the other veſſels, whether arteries or veins, depending more or leſs on the action of thoſe which immediately precede them in the courſe of circulation.

On the other hand, if the colourleſs diſcharge by which local congeſtion is prevented, be checked by powerful aſtringents, the congeſtion muſt ſoon extend to the red veſſels, and all the ſymptoms of inflammation in this way alſo ſupervene, as happens in gonorrhœa, dyſentery, &c. from aſtringent applications.

But if in either of theſe caſes, any of the red veſſels gives

way, the flow of blood relieves the diſtenſion, and the ſymptoms of inflammation are mitigated or diſappear.

If inſtead of the rupture of a red veſſel, the exhalants in the latter caſe again become debilitated, or the red veſſels in the former caſe are excited to action, the colourleſs diſcharge is reſtored, and the diſtenſion and conſequently the inflammation are thus alſo relieved.

In the phenomena of ſymptomatic fevers, we ſhall find all theſe obſervations fully illuſtrated.

It is evident from what has been ſaid, that the local affections of the different orders of ſymptomatic fevers are of a ſimilar nature, and we readily perceive why they are ſo eaſily convertible into each other. Thus it appears, if what is ſaid in the preface reſpecting the nature of idiopathic fever be admitted, that a ſtate of fever always originates in debility of the extreme veſſels.

Having now conſidered ſimple fever, and the different local affections of ſymptomatic fevers, we are prepared to take a view of the various combinations of theſe diſeaſes, which have been arranged under the three heads, Phlegmaſiæ, Hæmorrhagiæ Febriles, and Profluvia Febrilia, the definitions of which have been given in the general Introduction.

BOOK I.

OF THE PHLEGMASIÆ.

THE Phlegmaſiæ are thoſe ſymptomatic fevers in which the local affection is inflammation; when the inflammation is external, it is known by the ſymptoms already laid before the reader; when internal, by a fixed pain and leſion of function. To prevent repetition it will be proper, before we treat of the Phlegmaſiæ individually, to make ſome general obſervations on this order of diſeaſes.

CHAP. I.

Of the SYMPTOMS *of the* PHLEGMASIÆ.

THE only diagnoſtic between ſimple inflammation and the phlegmaſiæ is the preſence of fever in the latter. There is certainly a conſiderable difference between a pimple and a boil, and between erythema of the face and eryſipelas. The difference, however, is only in degree. In both inſtances the diſeaſe is characteriſed by redneſs, increaſed temperature, pain, and ſwelling.

We cannot, therefore, give any other account of the local affection of the phlegmasiæ than has been given of simple innflammation.

The combinations of inflammation and fever are of three different kinds, to one of which only the term phlegmasia is applied; the others being of a nature very different from the phlegmasiæ, and requiring very different modes of practice.

Inflammation and fever may be combined by a simple inflammation supervening on fever, as in the exanthemata; or they may be combined by the inflammation producing fever, as in the diseases we are about to consider; or by a phlegmasia (that is, the inflammation and the fever it occasions) supervening on simple fever.

The first of these is readily distinguished, by the appearance of the inflammation not aggravating the fever. The last is readily distinguished where the phlegmasia supervenes a considerable time after the commencement of the fever, as happened in many epidemics alluded to in the first volume of this treatise, in which inflammation of the stomach, bowels, brain, &c. supervened on intermittent or continued fever, or on the exanthemata, forming diseases essentially different, although they have not always been accurately distinguished, from the phlegmasiæ.

But when the phlegmasia supervenes soon after the commencement of the fever, the diagnosis, although still necessary in regulating the treatment of the disease, is more difficult. All that can be said on this subject, as far as I am capable of judging, is, that wherever the fever is completely formed and unaccompanied by external inflammation, or any of those symptoms which we are about to consider as denoting the presence of internal inflammation, however early they may supervene, the case is to be regarded as a combination of fe-

fever and phlegmaſia, whether they ariſe from the ſame cauſes or not.

It muſt be granted that if the fever has laſted for a conſiderable time, ſome days for example, before the local affection appears, the caſe is complicated. If then it be aſſerted, that there are caſes of phlegmaſiæ in which the fever is formed before the ſymptoms denoting the local affection appear, the queſtion ariſes, how long may the fever laſt before the appearance of ſuch ſymptoms, and the diſeaſe ſtill be regarded as a ſimple caſe of phlegmaſia?

In the true phlegmaſiæ both ſets of ſymptoms, eſpecially if the ſeat of the inflammation be internal, generally appear together. It is evident, that if any degree of the local affection produces a correſponding degree of fever, the ſymptoms denoting the former cannot appear unattended by fever.

How then, it may be aſked, do we determine which is the primary affection? To this the following circumſtances readily afford an anſwer. The cauſes which produce fever, do not at the ſame time produce inflammation. In 19 caſes of 20, inflammation does not ſupervene on fever, and when it does, it generally ariſes from cauſes different from thoſe which produced the fever. But if, on the other hand, ſuch inflammation as attends the phlegmaſiæ, be excited, fever is the conſtant attendant, and its degree is proportioned to that of the local affection.

Beſides, as we ſucceed by local remedies in relieving the inflammation, we find that in peciſely the ſame degree the febrile ſymptoms abate. If the inflammation be not terminated by reſolution, but run on to ſome of its other terminations, the febrile ſymptoms are ſtill found to correſpond to the changes which take place in the local affection, and ſo conſtant is this correſpondence, that we can determine, from the ſtate of the frbrile ſymptoms alone, in what way the inflam-

mation is terminating. Similar obſervations apply tothe other ſymptomatic ſevers. I cannot perceive the groundſon which ſome have maintained, that the local affection in the phlegmaſiæ is the conſequence of the general diſeaſe, and that when the inflammation proceeds merely from a local cauſe, the diſeaſe is not a true phlegmaſia. I have mentioned the local affection in the firſt part of the characters of ſymptomatic fevers, as forming the moſt eſſential part of the diſeaſe; and Dr. Cullen perhaps falls into an inaccuracy of ſome conſequence, when he makes the febrile ſymptoms the firſt part of theſe characters. From regarding the fever as the moſt eſſential part of the phlegmaſiæ, phyſicians ſeem often to have placed too little reliance on local means in their plans of cure, for we may regard it as a rule without exception in this order of diſeaſes, that when the end we have in view can be anſwered by ſuch means, they are always preferable to thoſe which more generally affect the ſyſtem. This inaccuracy in Dr. Cullen's definitions (for ſuch I think it will appear from what will be ſaid of ſymptomatic fevers) may be traced to the ſame ſource with others mentioned in the general Introduction. For as his method obliged him to arrange under one claſs, idiopathic and ſymptomatic fevers, it induced him to give to the latter as much as poſſible the appearance of the former.

In the phlegmaſiæ, then, the local affection is to be regarded as the primary diſeaſe, and it either comes on before the febrile ſymptoms or at the ſame time with them.

Although the line of diſtinction between the true ſimple inflammation and the phlegmaſia is well marked, the one never running into the other, (we never ſee pimples, or habitual erythema of the face produce fever) yet there are ſome external inflammations which may be regarded as forming the link of connection between theſe diſeaſes. Thus a ſmall

boil is unattended by fever, but if it be increaſed by local irritation, for example, it then occaſions fever, farther proving the fever to be the conſequence of the inflammation.

It may be obſerved indeed of all the phlegmaſiæ in which the inflammation is external, that in their ſymptoms, prognoſis, and mode of treatment, they approach nearer to the nature of ſimple inflammation than the other phlegmaſiæ do. The fever is more moderate, the mode of treatment leſs vigorous, and the prognoſis much better. In inflammations of thoſe parts which can neither be regarded as wholly external nor internal, the fauces, rectum, meatus auditorius, muſcles, &c. the degree of fever and the prognoſis are between theſe extremes.

Upon the whole, it may be obſerved, that the nearer the ſeat of inflammation approaches to the brain or ſtomach, the more conſiderable is the fever, and the greater the danger. Inflammations of the head, we ſhall find, are the more dangerous, the nearer they approach the brain; and inflammations of the trunk, the nearer they approach the ſtomach. Inflammation of the œſophagus, for example, occaſions a greater degree of fever, and is more dangerous than inflammation of the fauces; and inflammation of the duodenum than inflammation of the colon; and inflammation of the ſtomach is not only more dangerous than any of theſe, but alſo than inflammation of the lungs, or of any other part of the trunk. Inflammations of the extremities are leſs dangerous than thoſe of either the head or trunk.

We determine the preſence of internal inflammation by certain ſymptoms, which, from diſſection after death, it has been aſcertained, always indicate this ſpecies of derangement. Theſe ſymptoms are ſhortly enumerated in the definition of the phlegmaſiæ. "Dolore topico, ſimul læſa partis internæ

"functione;" wherever there is fixed pain with derangement of function, and fever, we have reason to believe that local inflammation is present, which we cannot doubt if the pulse be hard.

It appears from what was said of inflammation, that when it is present to a considerable extent, and almost always when it affects a vital organ, the whole sanguiferous system is excited to increased action, the final cause of which appears to be, to restore due circulation to the debilitated part. The vessels, it was observed, possessing transverse muscular fibres, the effect of unusual action must be, that they embrace their contents more forcibly, and consequently feel harder, and the difference between a strong pulse and a hard pulse seems to arise from the artery in the latter case never being wholly relaxed, while in the strong pulse, however powerful the contraction may be during the systole, we have reason to believe that there is a complete relaxation in the diastole, the time at which it strikes the finger.

In the case of the hard pulse, the end being to propel the blood into the debilitated vessels of the inflamed part, the arteries in the neighbourhood of these vessels, the better to effect this end, seem forcibly to embrace their contents, although in a less degree, during the diastole; and at length, the whole arterial system is affected in the same way, so that, however debilitated the circulation becomes, while the inflammation lasts, the hardness of the pulse is still remarkable, and by this means, we may often detect inflammation when there is no other symptom to guide us.

The foregoing symptoms not only leave no room to doubt the presence of inflammation, but also point out its seat. When we know the seat of the pain, as we know that of the different viscera, we conjecture which is affected; but when we, at the same time, observe what function is affected, the

matter is generally placed beyond a doubt. Thus, if the patient inform us that the pain is in the chest, we suspect the lungs to be the seat of the inflammation; but if, at the same time, he labours under cough and difficulty of breathing, no other function being more deranged than is usual in the same degree of fever, we no longer hesitate in pronouncing the disease to be inflammation of the lungs. In like manner, when the patient tells us that the pain is in the region of the stomach, and he is distressed with thirst and incessant vomiting, we know that he labours under inflammation of the stomach; and so on.

But the manner in which we judge of the seat of the inflammation, is not always so simple as in these cases; for it often happens, from the sympathy of parts, that although the inflammation is confined to one organ, the pain, and even derangement of function, extends to others. Thus, in inflammation of the kidneys, pain is often felt in the stomach, and its functions are often as much deranged as those of the inflamed part.

Nay, a pain is often felt in a distant part, while there is no pain whatever referred to the part affected. In inflammations of the liver, for example, the pain is sometimes confined to the shoulder. It also sometimes happens, that the functions of neighbouring parts are more obviously deranged than that of the part affected. The patient is often affected with dyspnœa and cough, or with vomiting, or with hiccup, when on dissection it is found, that the liver alone was the seat of inflammation.

In such cases, it is often very difficult precisely to determine its seat; sometimes, we shall find, it is impossible; but fortunately, it is not always necessary, and a person well acquainted with the symptoms of the phlegmasiæ, will never find himself at a loss to determine the seat of the inflamma-

tion with all the accuracy that is requiſite in practice; for although neither the pain nor leſion of function is always obſerved in the part affected, yet both the one and the other are always the ſame or ſimilar when the ſame part is affected, at leaſt in the ſame degree, and in the affection of no other part does the ſame combination of ſymptoms occur. Thus ſome difficulty of breathing, ſickneſs at ſtomach, or hiccup, with pain in the right ſhoulder, and a hard and frequent pulſe, as certainly denote inflammation of the liver as if the pain were referred to this organ, and accompanied with an evident derangement of its function.

In this and ſome other of the phlegmaſiæ, other circumſtances, particularly an increaſe of the pain on preſſure, aſſiſt the diagnoſis.

Diſſection has aſcertained, that in internal as in exterual inflammations the redneſs and ſwelling are either diffuſed, the latter being hardly perceptible, or more circumſcribed, and the ſwelling conſiderable.

Such, in a general view, are the ſymptoms which attend the commencement and progreſs of the phlegmaſiæ.

Like ſimple inflammation, theſe diſeaſes terminate by reſolution, ſuppuration, or gangrene.

The local ſymptoms indicating the reſolution of internal inflammation, are the gradual abatement of the pain, and the reſtoration of the function of the inflamed part.*

When ſuppuration takes place, the pain, for the moſt part, alſo abates. It is ſometimes kept up by the diſtenſion which the collection of pus occaſions. As in external inflammations, the throbbing often becomes more remarkable during ſuppura-

* See what was said of the various evacuations which frequently attend the resolution of inflammation in speaking of simple inflammation.

tion, or ſupervenes where it had not previouſly been perceived. The patient alſo feels a ſenſe of weight where the collection of matter is conſiderable, and if the part is not very deeply ſeated, fluctuation may be perceived through the integuments.

The only local ſymptom which indicates the termination of internal inflammation by gangrene, except the gangrene by deſtroying ſome conſiderable veſſel occaſions hemorrhagy, is the abatement or total ceaſing of the pain.

As far as we judge of the tendency to theſe different terminations by the local ſymptoms, we form our judgment in the ſame way as in ſimple inflammation. When the pain and derangement of function are unuſually obſtinate, we have reaſon to fear ſuppuration; when unuſually violent, mortification. We ſhall find that our judgment in this reſpect is alſo influenced by the nature of the part affected, ſome of the internal organs, the ſtomach and inteſtines for example, being more liable to gangrene; others, as the lungs and liver, to ſuppuration.

But in aſcertaining the tendency of internal inflammations, as well as the manner in which they are actually terminating, we truſt more to the general than the local ſymptoms.

When the fever is moderate, and yields readily to the means employed, we may hope for reſolution. During this termination, the fever abates with the local ſymptoms, and with them diſappears. When the febrile ſymptoms, though not very conſiderable, are obſtinate, and either yield little to the remedies employed, or ſoon ſuffer a new exacerbation, we have reaſon to fear ſuppuration; eſpecially if the inflammation has its ſeat in thoſe organs which are moſt liable to this termination.

When ſuppuration begins, the pulſe gradually loſes its hardneſs, and becomes fuller, but continues more frequent

than natural, and at the ſame time more or leſs of a cold ſtage is formed, the chills often continuing or recurring for many hours or even days, ſometimes followed by hectic fever; a ſpecies of ſymptomatic fever, which we ſhall ſoon have occaſion to conſider at length. It is enough to obſerve here, that it is a fever conſiſting of evening exacerbations, and morning ſweats which never bring complete or permanent relief.

If the abſceſs, inſtead of healing, continues to form matter, eſpecially if the diſcharge is of an unfavourable kind, this fever continues till the patient gradually ſinks under it. In this way internal ſuppurations may prove fatal, or they may deſtroy life more ſuddenly by deſtroying ſome of the vital organs, or laying open ſome of the larger veſſels, or by the abſceſs burſting into the cavity of the lungs and occaſioning ſuffocation.

When in the phlegmaſiæ, the febrile, as well as the local, ſymptoms are unuſually violent, and yield little to the means employed, we dread mortification, eſpecially if the inflammation has its ſeat in the parts moſt liable to this termination.

As ſoon as gangrene takes place, the pulſe loſes its hardneſs, and becomes very feeble, frequent, and often irregular. The debility is extreme, and the ſurface bedewed with partial cold clammy ſweats. So ſudden and complete in many caſes is the relief from pain when mortification ſupervenes, that the patient, for a ſhort time, often believe himſelf well. A perſon acquainted with the nature of his diſeaſe, however, knows that he has but a few hours to live, which is ſoon apparent by the rapidly-increaſing debility. But ſuch is the tranquility of this period, that many, in ſuch circumſtances, being made aware of their ſituation, have made their wills; for unleſs the inflammation has its seat in the brain, it is unuſual for coma or delirium to ſupervene in the phlegmaſiæ.

Mortification may take place, however, without a ceſſation of pain. When the mortification is confined to a ſmall portion of the inflamed part, the pain may continue to the laſt, as happened in a caſe in which I found, on examining the abdominal viſcera after death, almoſt every part of the inteſtines more or leſs inflamed, and a gangrenous ſpot about the ſize of a ſixpence on the ſtomach.

In ſuch caſes it is very difficult to aſcertain the preſence of gangrene, particularly if the inflammation has its ſeat in the ſtomach and bowels, all inflammatory affections of which are attended with much debility from the commencement. To determine the preſence of a diſeaſe, however, in which no remedy can avail, is of little conſequence.

Such is the general view of the ſymptoms of the phlegmaſiæ. Conſiderable deviations from the ordinary courſe however frequently occur; thus, in ſome caſes, particularly of inflammation of the lungs and liver, anxiety attends inſtead of pain, ſometimes the pulſe is not hard; this deviation however is rare. Nay, it ſometimes, though very ſeldom happens, that inflammation is preſent without producing any of its uſual ſymptoms.

The reader will ſee inſtances in which the inteſtines were inflamed, with little or no pain, in the 35th Epiſtle of Morgagni's work, De Cauſis et Sedibus Morborum, in Van Swieten's Commentaries, Sir John Pringle's Account of the Diſeaſes of the army, and in the fourth volume of De Haen's Ratio Medendi. In the laſt work he will find one caſe where the ſtomach was inflamed without vomiting, and another in which there was neither vomiting nor pain: and even the heart, as appears from caſes related in the Sepulchretum Anatomicum of Bonnetus, and the Epiſtles of Morgagni, has been inflamed without either pain or leſion of function; a ſtriking inſtance of which I have myſelf ſeen aſcertained by deſ-

ſection. I have alſo ſeen the appearances of inflammation in the inteſtines after death, where there had neither been pain nor derangement of their functions. Nay the brain itſelf as appears from the works of Huxham and others, has been found inflamed where none of the ſymptoms of phrenitis had exiſted. Such anomalous caſes occur ſo rarely, however, that they muſt not be allowed to influence our practice.

CHAP. II.

Of the Causes *of the* Phlegmasiæ.

The cauſes of the phlegmaſiæ, as I have already had occaſion to obſerve, are the ſame with thoſe of ſimple inflammation. The difference of the phenomena, depending not on any difference in kind, but on the different degree or extent of the inflammation, or the nature of the parts it occupies. For the cauſes of the phlegmaſiæ, therefore, the reader is referred to the Introduction to the Second Part.

CHAP. III.

Of the Treatment *of the* Phlegmasiæ.

The treatment, like the ſymptoms of the phlegmaſiæ, might be divided into two parts, the local and general; and theſe ſubdivided, according as our view is to procure reſolution

or ſuppuration. It will give a more connected view of the ſubject, however, to reverſe this order, and divide the treatment into that which promotes reſolution, and that proper when ſuppuration is deſirable; dividing the means employed in each caſe into local and general.

We are now, as it were, to ſurvey a new field in the practice of medicine. The maxims on which the treatment of all the fevers we have hitherto conſidered, is founded, are no longer applicable.

The moſt characteriſtic difference between the treatment of idiopathic fevers and the phlegmaſiœ is, that in the latter we employ antiphlogiſtic means more liberally, and the ſtimulating plan with more caution.

It is not meant that the unguarded employment of antiphlogiſtic means, particularly evacuations, is not attended with danger in the phlegmaſiæ. Beſides the danger of inducing a ſtate of general debility; if we greatly weaken the vis a tergo, the circulation in the inflamed part may ceaſe altogether, and gangrene enſue. This, as might be ſuppoſed, is moſt apt to happen in the phlegmaſiæ of longeſt duration, certain ſpecies of cynanche for example, or the more chronic forms of eryſipelas.

The acceſſion of gangrene in the phlegmaſiæ may be regarded as in ſome meaſure analogous to that of typhus in idiopathic fevers. The latter, we have ſeen, may be rendered formidable either by the exceſs of the previous excitement, or the unguarded uſe of antiphlogiſtic meaſures; in like manner gangrene in the phlegmaſiæ is to be dreaded when the various ſymptoms denoting active inflammation run unuſually high, and when antiphlogiſtic meaſures have been carried very far. In ſome of the phlegmaſiæ we have to fear another conſequence from profuſe evacuations, their degenerating into

chronic diſeaſes, always more obſtinate, and often more dangerous, than the phlegmaſiæ themſelves.

The maxims which regulate the employment of evacuants in idiopathic fevers will not apply to the phlegmaſiæ. In the former, we have ſeen, we almoſt always, cet. paribus, proportion the evacuation to the degree of general excitement; in the phlegmaſiæ we, cet. paribus, proportion them to the violence of the local affection, and we attend to the nature and degree of the febrile ſymptoms chiefly with a view to aſcertain the ſtate of that affection; and, as in ſome phlegmaſiæ, the inflammation is the greater, the greater the general depreſſion and debility, we ſometimes have recource to powerful antiphlogiſtic meaſures on account of the very ſymptoms, which, in idiopathic fevers, render the tonic plan indiſpenſible. In ſome of the phlegmaſiæ, we ſhall find that a weak and even irregular pulſe indicates the neceſſity of liberal evacuations.

Such a ſtate of depreſſion, however, is to be carefully diſtinguiſhed from debiliy, properly ſo called. The one is tranſitory, the other permanent. A depreſſion of ſtrength even to ſyncope may ariſe from the morbid contents of the ſtomach, and on the removal of theſe may ceaſe in the ſpace of half an hour. But debility, properly ſo called, is that which arriſes from want of nouriſhment, profuſe evacuations or diſeaſes of long continuance.

A careful diſtinction between theſe ſpecies of debility is no where more neceſſary than in the phlegmaſiæ. While in them, depreſſion of ſtrength, properly ſo called, never counterindicates evacuations, real debility often does. How they are to be diſtinguiſhed in each caſe will appear as we proceed. They are chiefly to be diſtinguiſhed by depreſſion of ſtrength coming on ſuddenly, and only attending inflammations of particular viſcera; while real debility almoſt always comes on ſlowly, and may attend any of the phlegmaſiæ if long protracted.

The extent to which antiphlogiſtic meaſures ſhould be carried in a great meaſure depends on the nature and ſeat of the inflammation. If theſe are ſuch that reſolution is the only ſafe termination, they ſhould be carried farther, than where ſuppuration alſo is favourable; becauſe, to procure a proper ſuppuration, a greater degree of general excitement, than that moſt favourable to reſolution, is requiſite; and it is ſometimes better, particularly in external inflammations, to induce ſuppuration, than to carry evacuations to the extent that would be neceſſary to procure reſolution.

Such are the general principles on which the treatment of the phlegmaſiæ is founded; it will be proper to conſider more particularly the different means employed in theſe diſeaſes.

Of the Treatment of the Phlegmaſiæ when the view is to procure Reſolution.

As reſolution is the moſt favourable termination in all the phlegmaſiæ, we always in the firſt place, endeavour to procure it. It is only where we fail in this attempt, or find that it cannot ſucceed without inducing a degree of debility more to be feared than ſuppuration, that we endeavour to induce the latter.

We procure reſolution,

1. By removing the remote cauſes if they ſtill continue to act.

2. Ay diminiſhing the diſtenſion of the veſſels in the inflamed part.

3. By diminiſhing the vis a tergo.

Of the firſt of theſe indications little need be ſaid; it is only neceſſary, for the moſt part, to be acquainted with the cauſes of inflammation, in order to remove them if they are ſtill applied.

Of the means of relieving the congeſtion in the inflamed part it will be neceſſary to ſpeak at greater length.

Theſe may be divided, as in ſimple inflammation, into thoſe which relieve the congeſtion by exciting the debilitated veſſels, and thoſe which directly remove part of their contents.

Many of the firſt we ſhall have occaſion to enumerate in ſpeaking of the different phlegmaſiæ. They are uſed either by waſhing the inflamed part, or parts in its immediate neighbourhood, with ſolutions of them, or ſuch ſolutions are made into poultices and kept applied to the parts. When the application is made to a neighbouring part, it ſeems to relieve the inflamed part in conſequence of the ſympathy which exiſts between all contiguous parts.

The means which act by leſſening the contents of the diſtended veſſels are upon the whole more powerful; theſe are of two kinds.

1. Such as debilitate the veſſels of ſome neighbouring part, in conſequence of which, a congeſtion being formed there, that of the inflamed part is relieved.

The means belonging to this claſs are termed rubefacients. Theſe are more powerful if, at the ſame time that they excite inflammation, they occaſion ſome evacuation. Bliſters therefore are found the moſt ſucceſsful rubefacients. The evacuation they occaſion, however, is ſlow; and it may be obſerved of local, as it was formerly obſerved of general, evacuations, that their effects are, cet. par. proportioned to the rapidity with which they are made.

2. Such as at once draw off a conſiderable portion of the blood diſtending the veſſels.

Of all the remedies employed in the phlegmaſiæ there is no other at the ſame time ſo powerful, and ſo generally applicable, as local blood-letting, and when, as in viſceral in-

flammations, we cannot let blood from the inflamed part itſelf, it often has an excellent effect to draw it from the ſkin in its immediate neighbourhood.*

Local blood-letting is performed either by cupping or by leeches. The former has the advantage of acting at the ſame time as a rubefacient. The cupping glaſſes are often applied as a rubefacient without the ſcarificator.

In many caſes, however, leeches are preferable. If the inflammation be external, they can be applied to the part, and even in internal inflammations, the tenderneſs on preſſure is often ſo great as not to admit of cupping.

The principal inconvenience in the uſe of leeches ariſes from our not being able to limit with accuracy the quantity of blood loſt. If few leeches are applied, the blood is ſlowly abſtracted; if many, the diſcharge after the removal of the leeches may be too copious; a little lint with moderate preſſure is generally ſufficient to check the bleeding. Where theſe can be conveniently employed, it is the beſt plan to apply a conſiderable number of leeches; where they cannot, the number muſt be ſmaller, and the flow of blood promoted by cloths dipped in warm water, and renewed as ſoon as they cool or, which is a much more effectual means, the application of a large poultice.

When either the excitement or the hardneſs of the pulſe is conſiderable, the more ſtimulating of the foregoing means, bliſters and rubefacients, are exceptionable, as might, a priori, have been ſuppoſed, inflammation being the cauſe both of the increaſed excitement and hard pulſe. In ſuch caſes, therefore, theſe ſymptoms are to be moderated by evacuations, before we have recourſe to them.

Such are the local remedies employed in the phlegmaſiæ,

* See what was said in Vol. 1, on the modus operandi of blood-letting.

and in the milder caſes, with proper means to remove any cauſe of irritation, and ſupport a proper action of the bowels, they are all that are neceſſary. In more ſevere caſes, however, general, as well as local, remedies muſt be employed, and then the third indication muſt direct our practice, to diminiſh the vis a tergo.

This part of the treatment bears a greater reſemblance to that of idiopathic fevers; the line of diſtinction, however, is ſtill well defined. It is unneceſſary to repeat what is the ſame in the treatment of both ſets of diſeaſes; for which I ſhall refer the reader to the firſt volume, confining myſelf to the circumſtances in which they differ.

The animal functions muſt by a mild and cooling diet, reſt, &c. be ſo managed as to leſſen as much as we can in this way the force of the circulation. On this part of the ſubject the obſervations are nearly the ſame as in idiopathic ſynocha. The differences which occur will be noticed in conſidering the phlegmaſiæ ſeparately.*

As cold is a frequent cauſe of the phlegmaſiæ, the reader will not be ſurpriſed to find, that it is never applied ſo freely in theſe diſeaſes as in many idiopathic fevers. The oppoſite extreme, however, is not leſs pernicious; the temperature ſhould be moderate and regular, and the drink tepid.

The phlegmaſiæ, it has been obſerved, as well as idiopathic

* We shall then also have occasion to consider a circumstance which, though never a source of irritation in idiopathic fevers, in some of the phlegmasiæ appears to be a very material one. Breathing pure oxygen gas, it has been found, is capable of exciting inflammation of the lungs, (see the experiments of Lavoisier and others) and we have reason to believe, that the greater the proportion of oxygen in atmospheric air, the greater is its tendency to excite inflammation.

fevers, have their crises. When a tendency to fweat appears in the former, it is to be encouraged by more warmth than is advifable in idiopathic fevers. But even here the hot regimen cannot be carried far; if the fweat does not flow readily it will probably be of little fervice.

The moft important part of the treatment of the phlegmafiæ is the diminution of the vis a tergo by venefection. Were we at all times capable of taking from the inflamed part, or fome part near it, with fufficient rapidity, the neceffary quantity of blood, there can be no doubt that this would be the moft fuccefsful mode of blood-letting in the phlegmafiæ. In this clafs of difeafes we have two objects in view from blood-letting; to diminifh the conjeftion in the inflamed part, which is beft performed by blood-letting from the part, and to diminifh the vis a tergo, which can only be effected by the lofs of a confiderable quantity of blood. But as the increafed vis a tergo is fupported by the inflammation, if the abftraction of blood be made in fuch a manner as to ferve at the fame time the purpofe both of local and general blood-letting, a lefs lofs of blood will, it is evident, anfwer the purpofe. It is often difficult, however, and fometimes impoffible, to take the neceffary quantity of blood from the part affected, or its neighbourhood; and then we muft let blood from the arm as in idiopathic fevers. If, for example, the inflammation have its feat in the head, it is better to take blood from the jugular vein than from the arm; but if it have its feat in the ftomach, as there is no confiderable vein which can be opened in the neighbourhood of this organ, we take the blood from any of the veffels in the upper part of the body which is moft convenient.*

We determine the propriety of blood-letting in the phleg-

* See what is said of the effects of abstracting the blood rapidly in vol. 1. p. 160 and seq.

maſiæ, as well as the extent to which it is to be carried, by comparing the ſtate of the general ſymptoms with the ſeat of the inflammation.

The preſence of inflammation in moſt parts occaſions general excitement. In ſuch caſes we judge of the degree of inflammation by that of the excitement, and regulate the employment of blood-letting in the ſame way as in ſimple ſynocha, except that the ſame degree of excitement warrants a a more copious evacuation, both becauſe other means are leſs powerful in the phlegmaſiæ, and becauſe in theſe diſeaſes the excitement is ſucceeded by a ſtate of mere debility, not by typhus as in idiopathic fevers.

Inflammation of certain parts, it has been obſerved, inſtead of increaſed excitement is attended by a ſtate of general debility. We then employ antiphlogiſtic meaſures the more aſſiduouſly, the greater and more ſudden the depreſſion of ſtrength, the inflammation being generally proportioned to this ſymptom. It ſometimes happens indeed, that the circulation is rendered ſo languid, that even at an early period it is difficult to procure the proper quantity of blood, and in a very ſhort time it becomes impoſſible. In a caſe of inflammation of the ſtomach and bowels which had only laſted ten or twelve hours, I ordered all the larger veins of both arms and both legs, and alſo the temporal artery to be opened, without being able to procure more than two or three ounces of blood. The patient died within 24 hours from the commencement of the diſeaſe, and on opening the body the ſtomach was found gangrenous.

But even where the inflammation is attended with increaſ- excitement, and there can be no difficulty at any period of the inflammatory ſtage in taking the neceſſary quantity of blood, early and deciſive evacuations are neceſſary ; for after a tendency to ſuppuration has come on, (and the ſame remark applies to gangrene if the inflammation be internal) we have

no means of preventing it ; beſides the diſeaſe is confirmed by its continuance, and at the ſame time the ſtrength impaired ; hence it generally happens, that if evacuations are neglected at an early period, they muſt be carried to a greater extent, while at the ſame time the patient is leſs able to bear them.

The propriety of having immediate recourſe to general blood-letting, then, in all the more alarming caſes of the plegmaſiæ, that is in all caſes of viſceral inflammation, is unqueſtionable ; and in this moſt eſſential reſpect, therefore, the practice is more uniform and ſimple than in idiopathic fevers.

This obſervation, however, applies only to the phlegmaſiæ not complicated with other diſeaſes. When they ſupervene on diſeaſes of debility, or in habits debilitated by previous diſeaſes, the employment of blood-letting requires more caution and diſcernment. Caſes of this kind we ſhall have occaſion to conſider more particularly in ſpeaking of the phlegmaſiæ ſeparately ; it is enough at preſent to obſerve, that experience has confirmed what, from the foregoing view of the nature of inflammation, might, a priori, have been ſuppoſed, that in ſuch circumſtances the indication is rather to relieve the conjeſtion in the inflamed part, than to diminiſh the vis a tergo, and conſequently that we are rather to depend ou local than general evacuations. I have ſeen general blood-letting in gaſtritis ſupervening on a very debilitated ſtate of the ſyſtem, ſerve no other purpoſe but that of haſtening the fatal termination.

With the exception of ſuch caſes, then, to determine the preſence of viſceral inflammation, and the propriety of general blood-letting is the ſame thing. It requires more attention, however, to determine the extent to which it ſhould be carried, and it is in vain (as ſome have attempted) to ſtate the preciſe quantity of blood which muſt be loſt to procure reſolution in the different phlegmaſiæ. It is true

that ſome phlegmaſiæ require more profuſe evacuations than others, but the ſeverity of the ſymptoms, and the ſtrength of the patient, muſt always influence the treatment.

In viſceral inflammations, we immediately have recourſe to general blood-letting, becauſe its effects are more ſpeedy than thoſe of any local evacuation. By general blood-letting, we at once diminiſh the vis a tergo, and hardly ever fail to procure more or leſs relief.

But the veſſels gradually adapting themſelves to their contents, the vis a tergo often becomes as great as ever, and thus, when the inflammatory tendency is conſiderable, by repeated general blood-lettings the ſtrength of the patient is often exhauſted before the diſeaſe is ſubdued. Such, however, is a very general practice in viſceral inflammations, as if the only indication were to diminiſh the vis a tergo. The conjeſtion in the inflamed part, which ſupports it, is overlooked.

If one or two general blood-lettings remove a viſceral inflammation, they are the moſt eaſy and expeditious means of cure, but wherever the ſymptoms require a frequent repetition of this remedy, we ſhould call in the aid of local evacuations.

When therefore the ſymptoms do not yield to a ſecond general blood-letting, we ſhould, without loſs of time, apply leeches, or the ſcarificator and cupping glaſſes, as near the part as poſſible, by which a repetition of the general blood-letting will often be prevented, and the extent to which it will be neceſſary to carry it, always diminiſhed.

In caſes where reſolution is the only favourable termination, we are to repeat the local and general blood-lettings, truſting, as much as the ſtate of the ſymptoms admits of, to the former, till the inflammation is ſubdued, or ſymptoms denoting the preſence of ſuppuration or gangrene, ſupervene.

It often happens, that after the vis a tergo has been diminiſhed by two or three general blood-lettings, the

cure may be completed by local blood-letting alone, and when it is ſufficient, which will be known by its effects, no other ſhould be employed.

With reſpect to the quantity of blood taken at each blood-letting, in an adult of ordinary vigour labouring under viſceral inflammation, fourteen ounces is a moderate general blood-letting; a moderate local blood-letting is from four to ſix ounces; and both will be the more effectual, the earlier they are employed, and the more quickly the blood is taken.

The repetition of the blood-letting muſt be regulated by the effects of that which has been employed. If the ſymptoms return with diminiſhed violence, a ſmaller blood-letting will be ſufficient; if with equal violence, an evacuation equal to the firſt will be neceſſary; and if with increaſed violence, we muſt ſtill proportion the evacuation to the ſtate of the ſymptoms; and the quantity of blood which is ſometimes loſt, without fatal effects, in viſceral inflammations, is aſtoniſhing.

There are two changes in the ſtate of the pulſe which we wiſh to obtain by blood-letting (whether local or general) in the phlegmaſiæ. The one, to reduce its ſtrength, this of courſe only applies to thoſe caſes where the excitement is greater than natural, the other is our aim in all the phlegmaſiæ, to remove its hardneſs, and it is generally in proportion as it has this effect, that blood-letting is ſucceſsful in theſe diſeaſes; the reaſon of which will readily appear from what has been ſaid of the nature of a hard pulſe. When the evacuations have greatly reduced the excitement, without removing the hardneſs of the pulſe, the prognoſis is bad. When they have been carried as far as they can be with ſafety, without removing this ſymptom, it is generally fatal. An extremely ſmall and hard pulſe, in thoſe caſes where the pulſe is generally ſtrong, is one of the worſt ſymptoms; becauſe, while it indi-

cates the neceſſity of evacuations, it informs us that the patient can no longer bear them.

Although in the phlegmaſiæ we take more blood from the full and plethoric, than from thoſe of an oppoſite habit, yet, in determining the quantity, we pay leſs attention to the habit than in the treatment of ſynochus, becauſe the blood-letting, as appears from what has juſt been ſaid, is more generally requiſite in the phlegmaſiæ, and bad conſequences are leſs apt to follow it.

For the ſame reaſons we pay comparatively little attention to ſeveral of the other circumſtances, which were enumerated in the firſt volume as demanding attention in the employment of this remedy in ſynocha, namely, the nature of the cauſe from which the diſeaſe proceeds, the ſeaſon and climate, and the nature of the prevailing epidemic.

Some of the circumſtances alluded to, however, muſt materially influence the employment of blood-letting in all caſes. The period of the diſeaſe, and the effects of the blood-lettings which have been employed, I have already had occaſion to mention; we are influenced alſo, as in idiopathic fevers, by the appearance of the blood which has been drawn. The age of the patient likewiſe demands attention; the younger he is, if not an adult, the ſame loſs of blood will produce the greater effect. In the decline of life more is to be apprehended from veneſection than at an earlier period, and then the older the patient is, it is the more to be dreaded.

Among the conſequences to be feared from blood-letting in the phlegmaſiæ, was mentioned its tendency to convert certain ſpecies of theſe, into chronic diſeaſes In advanced age, when the powers of the ſyſtem become languid, this effect is particularly to be dreaded; in old people, for example, inflammation

of the lungs often degenerates into the diſeaſe called peripneumonia notha, and acute rheumatiſm into chronic.

Such are the circumſtances which influence the employment of blood-letting in the plegmaſiæ, and if what has juſt been ſaid be compared with the obſervations made on catharſis in idiopathic fevers, the reader will readily perceive what part of thoſe obſervations is applicable to the phlegmaſiæ. We are never to ſubſtitute catharſis for veneſection in theſe diſeaſes; but more or leſs of it is almoſt univerſally proper in them.

Every degree of irritation in the phlegmaſiæ is particularly hurtful, and even that degree which attends the healthy ſtate of the bowels muſt be leſſened, the fæces ſhould be of a thinner conſiſtence, and diſcharged more frequently. The bowels, as in ſimple fever, are generally languid, ſo that cathartics are doubly indicated. Although cathartics are much leſs effectual than blood-letting in directly diminiſhing the vis a tergo, yet, when they act by relieving the congeſtion in the inflamed part, the cauſe of the increaſed vis a tergo, their effects may be even greater than thoſe of a moderate blood-letting: thus it is, that in all inflammatory affections of the alimentary canal, catharſis is of the moſt eſſential uſe.

From the immediate connection of the veſſels of the head and trunk, we can hardly more effectually relieve thoſe of the former, than by abſtracting part of the contents of the latter; hence it is, that from profuſe evacuations by the bowels, the depletion of the veſſels of the head often goes ſo far as to produce ſyncope; hence alſo, we eaſily explain the turgeſcence of the veſſels of the head, with the various ſymptoms it occaſions, previous to an attack of hemorrhois, and the immediate relief and pale countenance which follows the diſcharge from the hemorrhoidal veſſels. We might therefore, a priori, have ſuppoſed, that in inflammations of the

head, a copious diſcharge from the bowels would be found one of the beſt remedies, and experience has aſcertained that veneſection itſelf is often leſs powerful.

With reſpect to the evacuation by emetics, it is leſs generally, though often very uſeful, in the phlegmaſiæ. It is ſometimes of ſervice by evacuating the morbid contents of the ſtomach, more frequently by promoting a diſcharge by the ſkin. In ſome of the phlegmaſiæ it is otherwiſe ſerviceable, and in ſome it is in every caſe inadmiſſible. In inflammation of the pharynx, larynx, and trachea, for example, we ſhall find it a powerful means of relief; in inflammation of the encephalon, one of the moſt certain means of aggravating the diſeaſe.

We truſt leſs to the effects of diaphoretics in the phlegmaſiæ than in idiopathic fevers: moſt of the phlegmaſiæ, indeed, ar too rapid and dangerous for ſuch means. To this obſervation, however, we ſhall find a few exceptions; and in all the phlegmaſiæ, proper diaphoretics aid more powerful remedies.

It has not, perhaps, been ſufficiently attended to in the treatment of the phlegmaſiæ, that evacuations are not the only means we poſſeſs of diminiſhing the vis a tergo:

It is ſometimes adviſeable in theſe diſeaſes, when the patient is too weak to bear a conſiderable loſs of blood, to place him in the erect poſture while the blood is taken, by which a tendency to ſyncope will be induced by a ſmaller loſs of blood, and temporary, perhaps permanent relief obtained. It often happens that this tendency is more eaſily induced in the firſt, than in the ſecond or third blood-letting.

Nauſea, it is evident, acts in a ſimilar way. Of the medicines which tend to diminiſh the vis a tergo, one has lately demanded much attention. There have been various opinions reſpecting the effects of digitalis; we ſhall have occaſion to

confider them more particularly in fpeaking of the difeafes, in which this medicine has been employed.

Of the Treatment of the Phlegmafiæ when the view is to procure Suppuration.

When the fymptoms either do not remit on the ufe of proper remedies, or conftantly return with the fame, or greater violence, we have little hopes of procuring refolution.

In commencing the treatment of any of the phlegmafiæ, we fhould confider, whether, if we fail to procure refolution, fuppuration will be defirable. If fo, we muft not greatly reduce the ftrength, becaufe, after the excitement falls to a certain point, the more the fyftem is debilitated, the lefs inflammations tend to fuppuration, and the more to gangrene. This is one reafon, why, in external inflammations, and thofe of the fauces, we do not carry antiphlogiftc meafures fo far as in inflammations of the lungs, ftomach, inteftines, &c. and if in the former cafes thefe meafures have been carried far in hopes of procuring refolution; in order to induce a favourable fuppuration, we muft often have recourfe to fuch as increafe the excitement.

It is not, however, to be inferred, that the prefence of much excitement, and a great degree of inflammation, are favourable to fuppuration. Although from the very commencement of a phlegmafiæ we had nothing in view but to procure fuppuration, we fhould almoft always find it neceffary to employ to a greater or lefs extent the means for promoting refolution.

The fame principle regulates the employment of the local means.

While the inflammation is very confiderable, attended with much pain and fwelling, although we have no profpect of procuring refolution, we muft have recourfe to the fame

local means which are employed for this purpofe; they muft not, however, be carried fo far.

When, on the other hand, the inflammation is too languid, we muft, by warm poultices and fomentations, endeavour to promote it; and if the fyftem partakes of the langour, we muft have recourfe to the means which increafe general excitement.

It is a common opinion, that in external inflammation, applications which clog the pores promote fuppuration by preventing the exudation of the matter. This practice feems to have originated from the opinion of pus being formed by ftagnation from fome of the component parts of the blood. Such applications may be of ufe by increafing the heat of the part, and applying a ftimulus to its veffels.

In fhort, the chief difference between the treatment for refolution and that for fuppuration is, that in the former we endeavour entirely to remove, in the latter only to moderate, the inflammation.

When internal fuppurations occur without immediately proving fatal, our practice is fo much influenced by the nature of the part affected, that I muft defer fpeaking of the treatment till we come to confider the phlegmafiæ feparately.

As an abfcefs increafes, it is moft enlarged on that fide where the leaft refiftance is oppofed; when it is fituated near the furface, therefore, it generally points externally, and the matter is readily difcharged, which, for the moft part, fhould be done by an artificial opening, rather than by waiting for the flower operations of nature. But when the abfcefs is deep feated, or when, as in abfceffes of the lungs, the greateft refiftance is oppofed on the external fide, they point and burft internally.

It is always of confequence, therefore, in forming the

prognoſis, to aſcertain on which ſide of an abſceſs the leaſt reſiſtance is applied, and it ſometimes influences the mode of treatment, for where there is reaſon to apprehend that the abſceſs will burſt internally, it is adviſeable, in ſome caſes, to attempt the evacuation of the matter by an external opening, although there is no appearance of its pointing externally. This, we ſhall find, has often been practiſed with ſucceſs in abſceſſes of ſome of the viſcera.

The more perfect and unmixed the pus,* the more readily may we expect the abſceſs to heal, and the leſs injury will the habit ſuſtain. It is therefore our view in promoting ſuppuration, to procure a pus of the moſt favourable kind. For anſwering this intention, however, there are no other means than thoſe which have been pointed out. The nearer the general excitement and the degree of the local affection approach to thoſe beſt ſuited to promote ſuppuration, the more favourable will the ſuppuration be.

There is one caſe of ſuppuration which demands particular attention. When gangrene ſupervenes, if the caſe terminates favourably, it is by ſuppuration that the dead are ſeparated from the living parts. Thoſe ſtates which are unfavourable to reſolution and ſuppuration, tend to gangrene. On the means of preventing gangrene, therefore, nothing more need be ſaid. It remains to make a few obſervations on the mode of treatment after it has ſupervened.

The whole ſyſtem we have ſeen, partakes more of the affections of internal, than external parts. The ſlighteſt viſceral inflammation, it has been obſerved, occaſions fever, and the different changes which take place in the local affection

* See what was said of pus and the discharge from foul ulcers in speaking of the terminations of inflammation.

are indicated by correſponding changes in the ſtate of the general ſymptoms; on the ſurface, on the contrary, a conſiderable degree of inflammation may exiſt and even run on to ſuppuration without being attended with ſymptoms of general derangement: ſo in the caſe of gangrene, when it is ſeated in external parts, the vigour of the ſyſtem may ſtill be ſuch as to excite ſuppuration, and thus throw off the gangrened part; but when the gangrene is internal, the ſyſtem in general partakes too much of the local affection to ſupport, or indeed to afford time for, this proceſs by which alone the progreſs of the gangrene can be ſtopped. This is the leſs to be regretted, becauſe the injury done by internal gangrene is generally ſuch, that a ſeparation of the gangrened parts would only prolong the patient's ſufferings.

Of gangrene of the throat and muſcles it may be obſerved, as of inflammation of theſe parts, that the ſtate of the ſyſtem is neither ſo much affected by it as by the gangrene of more internal parts, nor ſo little as by that of the ſurface, and the prognoſis is neither ſo bad as in the one caſe nor ſo favourable as in the other; farther demonſtrating that the danger of gangrene is proportioned to the degree of ſympathy, which ſubſiſts between the ſyſtem in general and the part affected.

It is only then when gangrene is ſeated on, or near the ſurface, that we can attempt the cure with any hopes of ſucceſs.

The treatment may ſtill be divided into general and local.

The general treatment is nothing more than that employed in all ſtages of the diſeaſe, when the inflammation is too languid, only in the caſe before us this mode of treatment is carried to the greateſt extent. The patient muſt be ſupported by the liberal uſe of wine, and the bark muſt be given as freely as the ſtomach will bear. To this, however,

there is one exception, when gangrene is the conſequence of exceſſive inflammation it ſometimes appears while the general excitement is great, and if the ſeat of the diſeaſe is external, the increaſed excitement ſometimes continues after the commencement of the gangrene, ſupporting the inflammation, and occaſioning the gangrene to ſpread. In ſuch caſes it is evident that any means which increaſe the vis a tergo muſt promote the progreſs of the gangrene. "When the gangrene "arifes from the violence of inflammation," Dr. Cullen * obſerves, "the bark may not only fail in proving a remedy, "but may do harm, and its power as a tonic is eſpecially ſuited "to thoſe caſes of gangrene which proceed from an original "loſs of tone, as in the caſe of palſy and œdema; or to "thoſe caſes of inflammation where a loſs of tone takes "place, while the original inflammatory ſymptoms are re-"moved."

When therefore gangrene proceeds from exceſſive excitement, we muſt delay the invigorating plan till the preſence of the gangrene has reduced the morbid activity of the ſyſtem, which ſoon happens, and in ſuch caſes conſiderable attention and nicety is often requiſite, to determine the period at which the exhibition of bark and wine ſhould commence. The beſt rule perhaps is, as ſoon as the excitement is reduced to the natural degree, that is, as ſoon as the preternatural ſtrength of the pulſe has ſubſided, to exhibit ſmall doſes of bark and wine, and be regulated by their effects.

With regard to the local remedies, they are all ſuch as tend to excite the ſuppuration by which the gangrened parts are to be thrown off. Among the applications found ſerviceable are many of thoſe termed antiſeptics, and it has been a prevalent opinion, that theſe act by checking, by their antiſeptic power,

* Dr. Cullen's First Lines, paragraph 272.

the farther tendency to gangrene. But the ſame ſubſtances applied to parts ſeparated from the body will not have the ſame effect, at leaſt in any conſiderable degree, nor are the beſt antiſeptics, beſt fitted for checking the progreſs of gangrene. Beſides, whatever other effect they produce, they muſt tend to excite the powers employed in caſting off the dead parts; and as this alone accounts for their effects, there is no occaſion for any other ſuppoſition.

That they may have this effect, they muſt be applied to parts which ſtill retain ſome degree of excitability; it is proper therefore, eſpecially if the integuments remain entire, to make inciſions through the gangrened part, previous to their application. Heat is ſtill one of the moſt powerful means of exciting ſuppuration, ſo that warm poultices, whatever be their compoſition, are among the beſt applications. Some practitioners recommend the application of warm bricks over the dreſſings,* and they are prepared in Holland of various ſhapes for this and ſimilar purpoſes. But the local treatment of gangrene belongs to the province of the ſurgeon.

There is one caſe which deſerves notice, as particularly illuſtrating a law of the animal ſyſtem, by which it is rendered morbidly ſenſible to any of the natural agents, in conſequence of its uſual application or its application in the uſual degree being interrupted, without becoming more ſenſible to the action of any other.

When heat is ſo rapidly abſtracted from any part that it falls below the temperature neceſſary to life, like other dead animal matter, it runs to putrefaction. Thus the occurrence of gangrene in thoſe parts of the body where the circulation is languid, is not uncommon in cold climates. As we

* Van Swieten's Comment. in Aph. Boerhaavii.

ſhould, a priori, expect gangrene from this cauſe is moſt effectually checked by increaſing the temperature of the part. Were we, however, at once to apply a temperature equal to the common temperature of the body, its effect would be that of increaſing, inſtead of checking, the gangrene. Had not the parts in the neighbourhood of the gangrened part ſuffered from the application of cold, this practice might ſucceed; but the temperature of theſe parts having been greatly reduced for a conſiderable length of time, the uſual temperature becomes an agent ſufficiently powerful to derange the mechaniſm on which life depends; and as the phenomena are the ſame after life is deſtroyed, whether this be effected by too great an increaſe or diminution of temperature, the only effect of the ſudden increaſe of temperature is that of cauſing the gangrene to ſpread.

The proper treatment therefore is to bring the part to the natural temperature by very ſlow degrees, and the firſt application is generally ſnow or iced water.

I have already had occaſion to obſerve, that in caſes of extreme debility, gangrene often ſupervenes almoſt without any previous inflammation, the vis a tergo being too feeble to occaſion much diſtenſion in the veſſels of any part, however much debilitated. But ſhould it happen, even where the ſyſtem is not particularly debilitated, that by any abuſe the veſſels of a part, inſtead of being debilitated, which gives riſe to inflammation, are inſtantly deprived of vital power, gangrene would, in this inſtance, alſo, ſupervene with little or no previous inflammation. This has ſometimes though very rarely happened. *

* A remarkable instance is related in the Philosophical Transactions for the year 1763. A poor family in Suffolk were attacked with gan-

What has been ſaid may be regarded as nearly the ſum of all that is common in the ſymptoms, cauſes, and cure of the phlegmaſiæ. We are now to conſider the different ſpecies ſeparately; and notwithſtanding the nature of all being the ſame, ſuch, we ſhall find, is the difference ariſing from the function and ſituation of the parts affected by the inflammation, that there are hardly two diſeaſes more different than ſome of theſe.

Different diviſions of the phlegmaſiæ have been propoſed; that moſt generally adopted appears on many accounts to be the beſt, namely, the diviſion according to the different organs occupied by the inflammation.

It is true indeed that the inflammation may occupy the membranous or paranchimatous part of the organ,* and we know, from diſſection, that the inflammation is often confined to one of theſe parts. No parts of the body being more different in their ſtructure, we ſhould be inclined, a priori, to believe, that the ſymptoms of inflammation in them would eſſentially differ, and require in ſome reſpects different modes of treatment. And in moſt writers the reader will find this diſtinction made, and even different names applied to the different inflammations of the ſame organ. Thus they point out the ſymptoms which diſtinguiſh inflammation of the brain from that of its membranes, terming the one Cephalitis or Sphaceliſmus, and the other Phrenitis; thoſe which diſtinguiſh Pleuritis, inflammation of the pleura, from Peripneumonia, inflammation of the lungs; and ſo on.

In paranchimatous inflammation, it is ſaid, that as the

grene without previous inflammation. Some died, others lost different parts, the feet, and even the legs. No probable account of the cause is given.

* See a paper on the Phlegmasiæ by Dr. C. Smith, in the 2d vol. of the London Medical Communications.

parts are ſoft and yield readily, the pain is never ſo acute nor the fever ſo violent as in membranous inflammation, where, from the parts yielding with more difficulty, the ſymptoms are neceſſarily more ſevere.

This hypotheſis ſeemed confirmed, when it was obſerved that in moſt viſceral inflammations the ſymptoms are ſometimes of the one kind, ſometimes of the other. The opinion therefore was implicitly received, till Sauvages, Linnæus, and others, whom I ſhall hereafter have occaſion to mention, made diſſections in order to aſcertain its validity. The reſult was ſo far from being ſuch as was expected, that the membranes were often found inflamed where there had been only ſymptoms of paranchimatous inflammation, and the paranchima where the ſymptoms had been thoſe of membranous inflammation. Nay we ſhall find, when we conſider the caſes in which the diſtinction has been chiefly inſiſted upon, that where ſymptoms of paranchimatous inflammation alone have been preſent, the membranes alone have been found affected, and vice verſa. In ſhort, from theſe diſſections it appears that there are no ſymptoms by which we can diſtinguiſh the paranchimatous andmembranous inflammations of any organ, nor is this to be regretted, ſince experience has proved the practice to be preciſely the ſame in both. We can, for the moſt part, readily determine what organ is affected by the inflammation, and as this knowledge is all that is neceſſary for conducting the treatment of the diſeaſe, we need not be ſolicitous for more.

It is unneceſſary therefore to look for a more minute diviſion of the phlegmaſiæ than that adopted by Dr. Cullen, who, with a few exceptions, afterwards to be pointed out, conſiders the inflammation of each organ a different diſeaſe, and arranges the whole under the three heads of *Cutaneous*, *Viſceral*, and *Articular*.

CHAP. IV.

Of the PHLEGMON.

It was obſerved, in ſpeaking of ſimple inflammation, that there are but two ſpecies which can be well defined, the others appearing to be only varieties of theſe. The ſame obſervation applies to the cutaneous phlegmaſiæ; the two ſpecies of which are termed by Dr. Cullen, Phlegmon, and Erythema, forming the ſeventh genus in his ſyſtem of noſology, which he calls Phlogoſis, and defines,

"Pyrexia, partis externæ rubor, calor, et tenſio dolens."

The firſt ſpecies of this genus, the Phlegmon, he defines,

"Phlogoſis rubore vivido; tumore circumſcripto, in faſti-
"gium plerumque elevato, ſæpe in apoſtema abeunte;
"dolore ſæpe pulſatili."

The Erythema is defined,

"Phlogoſis colore rubicundo, preſſione evaneſcente; am-
"bitu inæquali, ſerpente; tumore vix evidente, in cuticulæ
"ſquamulas, in phlyctænas vel veſiculas abeunte; dolore
"urente."

Although pyrexia is the firſt word in the definition of phlogoſis, Dr. Cullen, for reaſons pointed out in the general introduction, uſes the term Phlogoſis to expreſs all ſpecies of cutaneous inflammations, whether accompanied by fever or not, as appears both from there being no other place in his ſyſtem of noſology for cutaneous inflammation unattended by fever, and from the manner

in which he uſes the term phlogoſis in his definitions of the exanthemata and phlegmaſiæ. *

Strictly ſpeaking, then, the term phlogoſis, as uſed by Dr. Cullen, although he defines it to be a febrile diſeaſe, and arranges under it only two ſpecies, includes four; the two phlegmaſiæ, the definitions of which have juſt been given, and the two ſpecies of ſimple inflammation conſidered in the Introduction.

As there does not appear, however, to be any occaſion for a generic name for the cutaneous phlegmaſiæ, the two ſpecies being diſeaſes nearly as different as almoſt any two of this order, and in reality, although both external, not having their ſeat in the ſame parts, I ſhall abandon both the term phlogoſis † and its definition. Were there no other reaſon for abandoning this term, the inaccurate manner in which it is uſed by Dr. Cullen, and by others who have adopted it from him, would be ſufficient.

The phlegmon, Dr. Cullen's firſt ſpecies of phlogoſis then is, according to the arrangement I have adopted, the firſt genus of the phlegmaſiæ. Of all the phlegmaſiæ this is in general the leaſt important, its ſymptoms are leaſt varied, and its prognoſis, moſt favourable. From peculiarity of habit, however, it now and then aſſumes a very ſerious form, ſpreading to great extent, and ſometimes even running to gangrene. Dr. Cullen alſo arranges as ſpecies of phlegmon, phimoſis,

* Introduction, vol. i.

† That Dr. Cullen was aware that his use of this term was not accurate, appears from the following note. "Pro nomine generis cujus "species est erythema minus recte in priore editione usurpatum fuit "Phlegmone. Novum nomen necessarium nobis videbatur, et *nihil* "*aptius* quam Phlogosis suppetebat." Synopsis Nosologiæ. Method. v. ii. p. 83.

paraphimoſis, ſpina ventoſa, &c. But all theſe affections belong to the province of the ſurgeon.

The only alteration I would propoſe on Dr. Cullen's definition of the phlegmon is to adapt it to the mode of arrangement I follow. It may be defined,

"Phlegmaſia, rubore externo vivido; tumore circumſcrip-
"to, in faſtigium plerumque elevato, ſæpe in apoſtema abe-
"unte; dolore ſæpe pulſatili."

SECT. I.

Of the Symptoms of Phlegmon.

It has already been remarked that the phlegmon does not differ from the puſtule, except in its being larger, the inflammation running higher, and being accompanied by fever. What has been ſaid of the latter, therefore, and the definition of phlegmon juſt given, comprehend all that need be ſaid of the ſymptoms of this diſeaſe.

The fever generally ſupervenes ſome time after the local affection, for the moſt part not till the latter has become conſiderable, and is always proportioned to it. The phlegmon rarely terminates either by reſolution or gangrene, and the ſuppuration is generally of a favourable kind.

Dr. M'Bride* regards, the phlegmon and boil as different, but the diagnoſis which he propoſes is too imperfect to afford grounds for ſuch a diſtinction. When the inflammation is circumſcribed, he obſerves, and deeply ſeated in the veſſels of

* Introduction to the Theory and Practice of Medicine.

ſome fleſhy part, the term for the diſeaſe is phlegmon. The furunculus or boil is an inflamed ſwelling more circumſcribed and pointed than the phlegmon, very hard and painful, ariſing indifferently on all parts of the body.

Dr. Cullen regards this, as well as many of the other ſpecies enumerated by authors, merely as varieties of the phlegmon, which differs in its form on the ſame parts, and ſtill more on different parts of the body. It may be doubted indeed whether ſome of his varieties* are properly arranged under phlegmon. Many of them evidently belong to the locales.

SECT. II.

Of the Cauſes of Phlegmon.

Of the cauſes of phlegmon, there is little to be ſaid in addition to what was ſaid of thoſe of ſimple inflammation. In plethoric and vigorous habits its exciting cauſes are often ſo ſlight as to eſcape attention.

The chief ſeat of the phlegmon and puſtule is the inner ſurface of the true ſkin and cellular ſubſtance contiguous to it, from which it extends to the adjoining parts of the cellular membrane and ſkin, ſo that the ſurface generally ſoon aſſumes a florid colour, the tumor at the ſame time extending both in depth and circumference.

* Culleni Synopsis Nosologiæ Method. v. ii. p. 84.

SECT. III.

Of the Treatment of Phlegmon.

On this part of the ſubject it is only neceſſary to refer to what has been ſaid of the phlegmaſiæ in general. We may attempt the cure of phlegmon by reſolution. As this mode of treatment, however, would generally be tedious, and after all that could be done, would often fail to produce the deſired effect, as ſuppuration in the phlegmon, is generally of a favourable kind, and laſtly, as ſome caſes of phlegmon, (thoſe for example, proceeding from extraneous matters introduced into, and irritating the ſkin) whatever relief be obtained by reſolvents, muſt at length terminate by ſuppuration, it is upon the whole found the beſt plan from the firſt to promote this termination.

Both on this account, and becauſe the fever is ſeldom conſiderable, it is rarely proper to have recourſe to the more powerful antiphlogiſtic meaſures, particularly general blood-letting. It is ſufficient that the fever be kept moderate by reſt, dilution, and apperients.

With reſpect to the local treatment, if the inflammation run high, it muſt be relieved in the earlier ſtages by local blood-letting, and it is generally proper to diminiſh the temperature of the part, by the repeated application of wet clothes; the effect of which is increaſed by adding to the water the ſaturn. accetat. the aq. ammon. acetat. or other refrigerants.

When the inflammation is moderate, no local application is neceſſary, till, from the diminution of the pain and increaſe of the throbbing, there is reaſon to believe that ſuppuration has commenced, which is to be promoted by warm poultices and emollient fomentations. The matter ſhould be diſcharged as ſoon as it is completely formed, and if the wound does not heal readily, the tonic plan is proper and ſhould be continued till the patient is reſtored to health, when gangrene is threatened this plan muſt be carried to its full extent.*

In ſome of Dr. Cullen's ſpecies of phlegmon, phymoſis, paraphymoſis, &c. other means are occaſionally neceſſary, but for theſe I muſt refer to the works on ſurgery.

CHAP. V.

Of Erysipelas.

It appears from what was ſaid of this diſeaſe in the general introduction, that I uſe the term eryſipelas in the ſame ſenſe in which Dr. Cullen uſes phlogoſis erythema. His definition requires no other alteration than what is neceſſary to adapt it to the mode of arrangement followed in this treatiſe.

Phlegmaſia rubore externo, preſſione evanescente; ambitu inæquali, ſerpente; tumore vix evidente, in cuticulæ ſquamulas, in phlyctænas vel veſiculas abeunte; dolore urente.†

* See the 78th and following pages of this volume.

† This definition does not include all the varieties enumerated by Dr. Cullen, some of which are merely local diseases.

SECT. I.

Of the Symptoms of Eryſipelas.

As the combination of eryſipelas and fever has been ſo generally regarded as an exanthema, and confounded with eryſipelas according to the above uſe of the term, I found it neceſſary in conſidering eruptive fevers to treat of what I have termed the eryſipelatous fever. In conſidering the nature of this fever, it was neceſſary to enter particularly into the ſymptoms of eryſipelas. For this part of the ſubject, therefore, I muſt refer the reader to the firſt volume.

From what is there ſaid, he will find that the eryſipelas bears the ſame reſemblance to the ſimple inflammation termed erythema, which the phlegmon does to that termed puſtule. The only difference in both caſes, being, that in the phlegmaſia the inflammation is generally of greater extent, its ſymptoms run higher, and it is attended with fever.

Such then are the four ſpecies of cuticular inflammation, the puſtule and erythema which are merely local affections, the phlegmon and eryſipelas which are febrile diſeaſes.

SECT. II.

Of the Cauſes of Eryſipelas.

In determining the nature of the eryſipelatous fever, it was neceſſary to conſider the cauſes, as well as the ſymptoms, of eryſipelas. For theſe alſo, I muſt, therefore, refer the reader

to the firſt volume; he will there find that eriſipelas ariſes from all the cauſes of the phlegmaſiæ in general, and alſo from certain cauſes which particularly affect the ſtate of the ſkin, derangement of the primæ viæ, &c. Like the other phlegmaſiæ, by leaving the part in a ſtate of debility, it leaves behind it a prediſpoſition to future attacks.

The chief ſeat of the eryſipelas and erythema is the outer ſurface of the true ſkin and the corpus mucoſum, but the former often ſpreads through the ſkin and affects the cellular ſubſtance beneath it.

Although it was neceſſary, in order to place the nature of the eryſipelatous fever in a clear point of view, to enter fully into the ſymptoms and cauſes of eryſipelas, the treatment could not be laid before the reader till he was made acquainted with the principles on which that of the phlegmaſiæ is founded. On this part of the ſubject, therefore, I am now to enter.

SECT. III.

Of the Treatment of Eryſipelas.

The plan of treatment common to all the phlegmaſiæ has been laid before the reader. In conſidering the treatment of each ſeparately, it will only be neceſſary to point out what is peculiar to it.

It was obſerved of the phlegmaſiæ, that the ſymptoms are more moderate, the prognoſis better, and conſequently the means required leſs vigorous, the more external the ſeat of the inflammation. On this account, in moſt caſes of eryſipelas, we do not find it neceſſary to have recourſe to very vigorous antiphlogiſtic meaſures; a cooling diet, an emetic at the com-

mencement, and gentle ſaline laxatives repeated ſo as to keep the bowels freely open, are generally ſufficient, if the inflammation is confined to the extremities.

When the fever is conſiderable, diaphoretics, particularly antimonials are proper. In this caſe the beſt plan appears to be, after the operation of an emetic, to give one or two briſk ſaline cathartics according to the urgency of the ſymptoms, and then ſupport a moderate catharſis by antimonials.

When a tendency to ſweating appears, we muſt be careful not to check it.

The propriety of attempting the cure of eryſipelas rather by catharſis than by blood-letting farther appears from the evident connexion between eryſipelas and the ſtate of the primæ viæ, which was conſidered at length in ſpeaking of the ſymptoms and cauſes of this diſease.

Veneſection, however, is ſtill the beſt means of leſſening excitement when it becomes conſiderable; and although in eryſipelas a briſk cathartic, by removing the cauſe which produced or tends to ſupport the diſeaſe, is often the beſt means of relieving it, yet if this fail, blood-letting will have a better effect than the continued repetition of powerful cathartics.

It is alſo to be obſerved, that although, as the inflammation is external, we do not, cet. parib. carry antiphlogiſtic meaſures ſo far as in many other of the phlegmaſiæ, yet as our view in eryſipelas is always to procure reſolution, eryſipelas having little tendency to ſuppuration except when it ſpreads deep, and ſuppuration, when it does occur in this diſeaſe, being generally unfavourable, antiphlogiſtic meaſures ſhould be carried farther than in the phlegmon.

While we endeavour to procure reſolution, however, we muſt keep in view the tendency of eryſipelas to gangrene. If the habit is good, indeed, this tendency is generally ſlight, and accompanied with little danger: but in debilitated habits,

and particularly in thoſe advanced in life, the gangrene, we have ſeen, is apt to ſpread deep, and ſometimes proves fatal.

What has been ſaid of the treatment of eryſipelas is rather applicable to that of the trunk and limbs than of the face. When neither coma nor delirium attends the latter, indeed, which is not often the caſe, its treatment is the ſame as in eryſipelas of other parts, with theſe differences, that on account of its tendency to affect the brain, the antiphlogiſtic means ſhould be more powerful in proportion to the ſymptoms, and, as the ſeat of the inflammation is in the head, more is to be expected from catharſis, after the removal of irritating matter from the primæ viæ, than in eryſipelas of the trunk and extremities. *

But when coma or delirium is preſent, the inflammation of the face is the leaſt important part of the diſeaſe. There is then reaſon to believe, that the inflammation has attacked the brain, † and experience has pointed out that the treatment in ſuch caſes is the ſame as in phrenitis, the diſeaſe we are next to conſider.

In laying down the treatment of the phlegmaſiæ, I paſſed over in ſilence the employment of opium in theſe diſeaſes, which by ſome has been warmly recommended, becauſe, as there is much difference of opinion on this ſubject, it ſeemed better to defer any obſervations on it, till we came to conſider the particular caſes in which it has been recommended.

The indication in all the phlegmaſiæ, we have ſeen, is to reſtore the proper balance of power between the veſſels of the inflamed part and the vis a tergo. Now as in active in-

* See the observations on catharsis in inflammations of the head, in the chapter on rhe treatment of the phlegmasiæ in general.

† See what is said on this part of the subject, in speaking of the symptoms of erysipelas, in the first volume.

flammation the vis a tergo is generally too powerful, especially if resolution is the termination we have in view, and as opium, for sometime after it is received into the system, increases the force* of the circulation, we should, a priori, believe, that in most cases of the phlegmasiæ, it would be found pernicious. But as the vis a tergo, on the other hand is often in a great measure supported by the pain and irritation of the local affection, opium, by allaying these, may sometimes be the means of diminishing it. It appears from these observations, then, that the effects of opium in the phlegmasiæ are most to be dreaded where the vis a tergo, which is best measured by the hardness of the pulse,† is, cet. paribus, greatest; and most benefit is to be expected from this medicine where the pain and irritation are so. At the commencement of the phlegmasiæ, before the mass of blood has been lessened, the same cause will produce a greater increase of the vis a tergo, than after the contents of the vessels have been diminished; then the pain and irritation often bearing a greater proportion to the vis a tergo, we may attempt allaying them at the risk of some temporary increase of it.

The result of experience in this part of the treatment, coincides with these observations. At the commencement of the phlegmasiæ, opium is found hurtful, but after we have reduced the vis a tergo, if the pain and irritation are still considerable, it is often attended with advantage to allay

* See Dr. Crump's experiments on the pulse, in his Treatise on Opium, and a variety of other observations on this subject.

† See what was said of a hard pulse, in the section on the symptoms of the phlegmasiæ. While the pulse is hard, the blood is always propelled into the vessels of the inflamed part with a force greater than in due proportion to their strength, however great the general debility may be.

them by a cautious uſe of opium. I have repeatedly employed it in this way with advantage, and, cannot help diſſenting from thoſe who would ſtrike out opiates from the catalogue of medicines in this claſs of diſeaſes, or only employ them to procure ſleep after almoſt every ſymptom has diſappeared.

It is alſo to be obſerved, that the temporary increaſe of the vis a tergo occaſioned by opium will be the leſs injurious in the phlegmaſiæ, the leſs important the ſeat of the inflammation, and the leſs ſuppuration and gangrene are to be dreaded. Hence we may employ opium earlier in external, than internal inflammations. We often ſee ſo trifling a diſeaſe as a ſmall ſuppuration in the finger, occaſion ſleepleſs nights and a conſiderable degree of fever; both of which may often be prevented by a moderate doſe of opium.

In eryſipelas of the trunk and limbs, then, after the vis a tergo is to a certain degree reduced, opiates, with proper means to prevent their conſtipating effects, are often uſeful. *

In eryſipelas of the face, even without coma or delirium, from the tendency of this form of the diſeaſe to affect the brain, they are a more doubtful remedy.

Of the local means employed in eryſipelas.

Local blood-letting from the ſkin, in the immediate neighbourhood of the inflamed part, is often attended with advantage. Cupping is generally inadmiſſible on account of the irritation, which attends it, frequently cauſing the eryſipelas to ſpread. Even the application of leeches ſometimes has this effect. Bliſters are not to be employed in this diſeaſe, except

* See the 12th vol. of Dr. Duncan's Med. Com.

for the purpose of recalling the inflammation to the skin, when it has left it, and seized on an internal part.

There is much difference of opinion respecting the best application to the inflamed part. "As in this disease," Dr. Cullen observes, "there is always an external affection, and "as in many instances there is no other; so various external "applications to the part affected have been proposed; but "almost all of them are of doubtful effect. The narcotic, "refrigerant, and astringent applications are suspected of dis-"posing to gangrene; spiritous applications seem to increase "the inflammation, and all oily or watry applications seem "to occasion its spreading. The application which seems "most safe, and which is now most commonly employed is "that of a dry mealy powder frequently sprinkled on the in-"flamed parts." Many, however, particularly foreign writers, are of a different opinion. Quarin,* Vogel,† and others dissuade, indeed, from solutions of lead, once much employed, and resinous and oily applications, which they think tend to indnce gangrene, but they warmly recommend mild vegetable decoctions, particularly that of elder flowers in milk.‡ Quarin even condemns all dry applications. Most of the external applications recommended in erysipelas, Burserius observes, if not hurtful, are useless; he, however, advises the part to be kept moist with mild decoctions of marshmallows, &c. or with tepid milk. It is not improbable, I think, that as the erysipelas of different countries is found to differ in several respects, namely, its tendency to gangrene, to be accompanied by typhus, to attack particular

* De Febribus. † De Cog. et Cur. Morb.

‡ If erysipelas of the breast, Quarin observes, be treated with irritating applications, it often terminates in schirrus and even cancer.

parts of the body, &c. the ſame applications will not in every country be found the beſt. Moſt Britiſh practitioners agree with Dr. Cullen that a dry mealy powder is the beſt application; I have generally ſeen it attended with good effects.

When the part is very tenſe, and there is reaſon to dread gangrene, Burſerius recommends making inciſions. Theſe are alſo neceſſary when the inflammation has ſpread deep, and abſceſs is formed under the ſkin.*

When veſicles ariſe, it has been recommended to open them,† that the acrid matter, it is ſaid, may not erode the parts beneath; the propriety of this practice may be queſtioned.

Such is the mode of treatment in the more common forms of eryſipelas. The malignant eryſipelas and the eryſipelas infantum, are the only forms of the diſeaſe to which the foregoing obſervations are not applicable.

I have already had occaſion to conſider the treatment of eryſipelas ſupervening on the typhus gravior, and it appears from the obſervations of Burſerius, Quarin, and other foreign writers, that the treatment of malignant eryſipelas, after the typhus ſupervenes, is the ſame.

Burſerius chiefly relies on the bark, Virginian ſnakeroot, camphire, and the ſulphuric acid. To theſe Quarin adds ſcordium, and wine. In malignant eryſipelas, however, the typhus is not always preſent from the beginning, It is therefore neceſſary, where this form of the diſeaſe is common, to proceed with much caution at the commencement, and not carry antiphlogiſtic meaſures farther than the ſtate of the ſymptoms abſolutely requires. What was ſaid of the treat-

* Vogel de Cog. et Cur. Morb.

† Quarin De Febribus.

ment in thofe idiopathic fevers, which are apt fuddenly to affume the form of typhus, is with little change applicable here. *

The eryfipelas infantum is of a peculiar nature, and has not till lately demanded much attention. Hoffman feems to be the earlieft writer who defcribes it. It has fince been treated of by feveral writers, particularly by Dr. Underwood, in his Work on the Difeafes of Children, and by Dr. Bromfield and Dr. Garthfhore, in the fecond volume of the Medical Communications.

The tendency of the eryfipelas infantum to gangrene, pointed out the bark, and its effects feem fully to have anfwered expectation. There is no difeafe, Dr. Garthfhore obferves, in which the bark is more evidently beneficial. When it cannot be taken in fufficient quantity by the mouth, it muft be given in clyfters. To this medicine, with the addition of local applications, practitioners feem wholly to have trufted.

With regard to the local applications, farinaceous powders have been lefs employed in this than in other forms of eryfipelas. They are not even mentioned by thofe who have been moft converfant with the difeafe.

Dr. Bromfield recommends fomentations, fpiritous embrocations, and emollient cataplafms. Dr. Garthfhore, who obferves that he has found thefe applications beneficial, alfo recommends faturnine ointment and poultices. Saturnine

* Anomalous cases occur in this as in most other diseases. We sometimes meet with cases of erysipelas attended with little general excitement, particularly of habitual erysipelas, in which, although there is no tendency to gangrene, the tonic plan proves most successful. Thus, in the 16th volume of Dr. Duncan's Medical Commentaries, the reader will find a case of erysipelas of the hands where the fever was slight, which was repeatedly removed by a free use of wine.

poultices, he remarks, generally removed the inflammation without the aid of the bark, but removed in this way from one part, it always attacked another; at length he was led to truſt the cure wholly to the bark, and the common fomentation with a little ſoap diſſolved in it; and thought that ſaturnine applications were upon the whole prejudicial.

In the treatment of eryſipelas infantum, as in all other forms of the diſeaſe, much attention ſhould be paid to the ſtate of the bowels. Clearing the primæ viæ ſhould always make the firſt part of the treatment. The eryſipelas infantum has, with much probabilility, been aſcribed to ſome fault in the milk; and it is aſſerted that the nurſe's indulging in the uſe of ſpirituous liquors often occaſions it.

I ſhall finiſh the account of eryſipelas with the following obſervations of Tiſſot, reſpecting the means of preventing its return. Thoſe ſubject to returns of eryſipelas, he obſerves, ſhould carefully avoid the uſe of milk,* cream, and all rich and viſcid aliment. baked and ſtrong meats, aromatics, ſtrong wines, a ſedentary life, ſtrong affections of the mind, above all, rage, and, if poſſible, chagrin. They ſhould live chiefly on herbs, fruits, and other articles slightly aceſcent, drink water and ſome of the light white wines, and make frequent uſe of cream of tartar. †

Theſe precautions, he adds, are of the greater importance, becauſe, not to mention the danger from frequent returns of eryſipelas, they denote ſlight affections of the liver or gall-bladder, which, when neglected, often become ſerious.

* With respect to the use of milk, it can only be prejudicial when it oppresses the stomach. Whatever hurts the digestion disposes to this disease. See what was said of dyspepsia, in the 1st vol. page 123.

† This diet, however, is only proper in plethoric habits, and when the stomach bears it well.

CHAP. VI.

Of Phrenitis.

The ſymptoms of phrenitis differ eſſentially from thoſe of the other phlegmaſiæ. The ſymptoms denoting the local affection being ſuch as frequently attend idiopathic fevers. Contrary to what happens in the other phlegmaſiæ, it is generally accompanied with coma or delirium, and the excitement often runs as high, as in the moſt ſtrongly marked ſynocha.

The cauſes of theſe peculiarities the reader will readily perceive. Simple fever conſiſts in a general affection of the ſanguiferous and nervous ſyſtems; to theſe, in the phlegmaſiæ, are ſuperadded certain local ſymptoms, pain, and the derangement of ſome of the functions. But when the inflammation is ſeated in the brain, on which ſenſation and motion in every part of the ſyſtem depend, the ſymptoms of the local affection are not local, but general ſymptoms. Hence the difficulty of finding a diagnoſis between phrenitis and idiopathic fever, which is farther increaſed by the latter, ſometimes becoming a real phrenitis.

When the velocity of the blood is much increaſed, indeed, from the nature of the circulation in the head, there muſt, always be a tendency to diſtenſion of its veſſels. Hence head-

ach, ſuffuſion of face, inflammation of the eyes, and bleeding from the noſe, are among the moſt common ſymptoms of ſynocha.

Phrenitis is the third genus of Dr. Cullen's phlegmaſiæ. The only alteration which will be neceſſary in his definition, is to adapt it to the mode of arrangement which I follow.

Phlegmaſia, dolore capitis, rubore, faciei et oculorum, lucis et ſoni intolerantia, pervigilio, dilirio feroce vel typhomania.

I have already had occaſion to allude to the diviſion into phrenitis, and cephalitis or ſphaceliſmus.

With regard to the circumſtance which determines the diſeaſe to aſſume the one or other of theſe forms, on comparing what has been ſaid of the nature of inflammation with the ſymptoms of phrenitis, we ſhall have reaſon, I think to believe, that phrenities, properly ſo called, is the only real inflammation of the brain. The cephalitis or ſphaceliſmus being merely a congeſtion in the larger veſſels, and not eſſentially differing from apoplexy.

In all parts of the body a congeſtion in the larger veſſels occaſions comparatively little pain, litttle increaſe of temperature, and little fever.

MASS. MEDICAL COLLEGE

SECT. I.

Of the Symptoms of Phrenitis.

PHRENITIS often makes it attack with a ſenſe of fullneſs in the head, fluſhing of the countenance, and redneſs of the eyes, the pulſe being full, but in other reſpects natural. As theſe ſymptoms increaſe the patient becomes reſtleſs, his ſleep is diſturbed or forſakes him.

It ſomtimes comes on with pain, or a peculiar ſenſe of uneaſineſs of the head, back, loins, and joints,* in ſome caſes with tremors of the limbs, and intolerable pains of the hands, feet, and legs. It now and then attacks with ſtupor and rigidity of the whole body; ſometimes with anxiety, and a ſenſe of tenſion referred to the breaſt, often accompanied with palpitation of the heart. Sometimes nauſea and a painful ſenſe of weight in the ſtomach are among the earlieſt ſymptoms. In other caſes the patient is attacked with vomiting, or complains of the heart-burn, and griping pains in the bowels.

When the reader reflects on the intimate connection which ſubſiſts between the brain and every part of the ſyſtem, he will not be ſurpriſed to find the ſymptoms attending the commencement of phrenitis ſo various, and that the ſtomach in particular ſhould ſuffer, which ſo remarkably ſympathiſes with

* Saalman's Observations on Phrenitis, in the Acta Erudit. Lipsien.

the brain. Thefe fymptoms affift in forming the diagnofis between phrenitis and fynocha.*

The feat of the pain is various, fometimes it feems to occupy the whole head: fometimes, although more circumfcribed, it is deep-feated and ill-defined. In other cafes it is felt principally in the forehead or occiput. The rednefs of the face and eyes generally increafes with the pain, and there is often a fenfe of heat and throbbing in the head, the countenance acquiring a peculiar fiercenefs.

Thefe fymptoms for the moft part do not laft long before the patient begins to talk incoherently, and to fhew other marks of delirium. Sometimes. however, Saalman obferves, delirium did not come on till the fifth, fixth, or feventh day.

The delirium gradually increafes, and often arrives at a ftate of phrenzy. The face becomes turgid, the eyes ftare, and feem as if ftarting from their fockets, tears and fometimes blood flow from them, the patient refembling a furious maniac, from whom it is often impoffible to diftinguifh him, except by the fhorter duration of the difeafe.

The delirium affifts in diftinguifhing phrenitis and fynocha,†

* The pain of the head soon increases, and sometimes becomes very acute. " If the meninges." says Dr. Fordyce, (Practice of Medicine), " are affected, the pain is acute; if the substance only, obtuse and sometimes but just sensible." And Dr. Cullen remarks, " I am here, as in other analogous cases, of opinion, that the symptoms above mentioned of an acute inflammation, always mark inflammations of membraneous parts, and that an inflammation of paranchima or substance of viscera exhibits, at least commonly, a more chronic inflammation."

It is unnecessary here to make any farther observations on this part of the subject. When we consider pneumonia, in which the distinction has been chiefly insisted upon, and is still very generally admitted, I shall have occasion to enter upon it at length.

† Lobb's Practice of Medicine.

as it is not a common ſymptom in the latter. When delirium does attend ſynocha, however, it is of the ſame kind as in phrenitis.

As we ſhould, a priori, expect in phrenitis, the different organs of ſenſe are generally much affected.

The eyes are incapable of bearing the light, and falſe viſion, particularly that termed muſcæ volitantes,* and the appearance of flaſhes of light paſſing before the eyes, are frequent ſymptoms.

The hearing is often ſo acute, that the leaſt noiſe is intolerable; ſometimes, on the other hand, the patient becomes deaf, and the deafneſs, Saalman obſerves, and morbid acuteneſs of hearing now and then alternate. Affections of the ſmell, taſte, and touch, are leſs obſervable.

As the organs of ſenſe are not frequently deranged in ſynocha, the foregoing ſymptoms farther aſſiſt the diagnoſis between it and phrenitis.

The pulſe is not always ſo much diſturbed at an early period, as we ſhould expect from the violence of the other ſymptoms compared with what we obſerve in idiopathic fevers. When this circumſtance is diſtinctly marked, it forms perhaps the beſt diagnoſis between phrenities and ſynocha, and gives to the former more of the appearance of mania. "Interea exurgit febris nunc levis nunc intenſa, nec ſemper " morbi impetui conſona, adeo ut ſola diuturnitate discrepare " videatur hoc delirii genus a mania, quam contumaciorem " eſſe nemo neſcit."‡

* It may sometimes arise from this deception of sight that the patient picks the bed-clothes. This, however, I have observed, he often does without directing his eyes to the bed-clothes, or indeed particalarly to any object.

‡ Lieutaud's Synopsis Med. Pract. de Phrenitide.

In many caſes, however, the fever runs as high as the delirium. In general, the hardneſs of the pulſe is more remarkable than in ſynocha, ſometimes it is both ſmall and hard, and ſometimes irregular; the pulſe in ſynocha is always ſtrong, full, and regular.

The reſpiration is generally deep and ſlow, ſometimes difficult, now and then interrupted with hiccup, ſeldom hurried and frequent, except from the patient's exertions. In many of the caſes mentioned by Saalman, pneumonia ſupervened.

The deglutition is often difficult, now and then convulſive. The ſtomach is frequently oppreſſed with bile, which is an unfavourable ſymptom; and complete jaundice, the urine and ſkin being tinged with yellow, ſometimes ſupervenes. Worms in the ſtomach and bowels are alſo frequent attendants on phrenitis, and there is reaſon to believe, may have a ſhare in producing it. The hydrocephalus internus, which is more allied to phrenitis* than to dropſy of the brain properly ſo called, ſeems often, in part at leaſt, to ariſe from derangement of the primæ viæ, particularly from worms. We cannot otherwiſe, I think, account for the frequent concurrence of theſe diſeaſes. As we proceed in conſidering the different phlegmaſiæ, we ſhall find that there are few to which derangement of theſe paſſages does not give ſome prediſpoſition.

Inſtead of a ſuperabundance, there is ſometimes a deficiency of bile, which ſeems for the moſt part to afford a ſtill worſe prognoſis. The fæces being of a white colour, and a black cloud in the urine are regarded by Lobb † as fatal ſymptoms. The black cloud in the urine is owing to an admixture of blood; when unmixed with either blood or bile the urine is generally pale.

* See what is said in the next section on the appearances on diſſection in phrenitis.

† Lobb's Practice of Physic.

There is often a remarkable tendency to the worſt ſpecies of hemorrhagy towards the fatal termination of phrenitis. Hemorrhagy from the eyes has already been mentioned. Hemorrhagy from the inteſtines alſo, tinging the ſtools with a black colour, is not uncommon. Theſe hemorrhagies are never favourable; but the hamorrhagies characteriſtic of ſynocha, particularly that from the noſe, ſometimes occur at an earlier period, and, if copious, bring relief. More frequently, however, blood drops ſlowly from the noſe, demonſtrating the violence of the diſeaſe without relieving it. In other caſes there is a diſcharge of thin mucus from the noſe.

Tremors of the joints, convulſions of the muſcles of the face, grinding of the teeth, the face from being florid ſuddenly becoming pale, the urine being of a dark red or yellow colour or black, or covered with a pellicle, the fæces being either bilious or white and very fœtid, profuſe ſweat of the head, neck, and ſhoulders, paralyſis of the tongue, general convulſions much derangement of the internal functions, and the ſymptoms of other viſceral inflammations, particularly of pneumonia, ſupervening, are enumerated by Saalman as affording an unfavourable prognoſis. The delirium changing to coma, the pulſe at the ſame time becoming weak, and the deglutition difficult, was generally the forerunner of death.

When, on the contrary, there is a copious hemorrhagy from the noſe, hemorrhoidal veſſels, lungs, mouth, or even from the urinary paſſages; when the delirium is relieved by ſleep, and the patient remembers his dreams, when the ſweats are free and general, the affection of the ſight is diminiſhed or removed, and the febrile ſymptoms become milder, the prognoſis is favourable.

In almoſt all diſeaſes, if we except thoſe which ſuddenly prove fatal, as death approaches, a ſimilar train of ſymptoms, denoting extreme debility of all the functions, ſupervenes.

Thefe the reader will find enumerated at length in the firft volume; it is unneceffary to repeat them here.

The blood does not always fhew the buffy coat.

Phrenitis, like moft other difeafes, has fometimes affumed an intermitting form, the fits coming on daily, fometimes every fecond day.*

When phrenitis terminates favourably, the debility which fucceeds the increafed excitement is lefs, in proportion to that excitement, than in idiopathic fevers, a circumftance which affifts in diftinguifhing phrenitis from fynocha.

The diagnofis between thefe difeafes is farther aided by the effects of the means employed. For if in phrenitis, we fucceed in removing the delirium and other local fymptoms, the febrile fymptoms in general foon abate. Whereas in fynocha, although the delirium and head-ach be removed, the pulfe continues frequent, and other marks of indifpofition remain for a much longer time.†

It will be of ufe to prefent at one view the circumftances which form the diagnofis between phrenitis and fynocha.

Synocha generally makes its attack in the fame way; its fymptoms are few and little varied. The fymptoms at the commencement of phrenitis are often more complicated, and differ confiderably in different cafes.

Derangement of the internal functions is comparatively rare in fynocha. In phrenitis it almoft conftantly attends, and

* Saalman.

† Delirium vero febrile vel symptomaticum," says Lieutaud (Synopsis Medic. Practic.) " præviæ febri appenditur, solosque fe- " bricitantes adoritur, cur minime mirum si hoc sedato, perstet febris, " solitamque periodum absolvat. Aliter se res habet sub phrenitide; " si enim resipiscant ægri, illico sanati restituuntur, si excipias virium " debilitatem qua aliquandiu tenentur hoc gravissimo morbo conva- " lescentes."

often appears very early. The ſame obſervations apply to derangement of the organs of ſenſe.

In ſynocha, the pulſe from the commencement is frequent, ſtrong, and rapid. In phrenitis, the ſymptoms denoting the local affection are often well marked before the pulſe is much diſturbed.

In phrenitis we have ſeen, the pulſe ſometimes very ſuddenly loſes its ſtrength, the worſt ſpecies of hemorrhagies and other ſymptoms denoting extreme debility ſhewing themſelves. This never happens in idiopathic ſynocha, at leaſt in this country.

When the termination is favourable, the degree of debility which ſucceeds is leſs in proportion to the preceding excitement in phrenitis than in ſynocha.

Laſtly, if we ſucceed in removing the delirium and other ſymptoms affecting the head, the ſtate of the fever is found to partake of the favourable change more immediately and completely than in ſynocha, where, although we ſucceed in relieving the head-ach or delirium, the fever often ſuffers little abatement.

In ſpeaking of the phlegmaſiæ in general, I had occaſion to obſerve that certain anomalous caſes now and then occur, in which they are unattended by the uſual ſymptoms. Thus, Drs. Willis, Langriſh, and Huxham relate caſes in which traces of inflammation of the brain were diſcovered after death where the ſymptoms of phrenitis had not appeared, and Bonnetus and Morgagni on the other hand, relate ſome in which the ſymptoms of phrenitis were preſent, and yet no traces of inflammation diſcoverable after death.

With regard to the duration of phrenitis, Eller * obſerves, that when it proves fatal the patient generally dies within ſix,

* Eller de Cog. et Cur. Morb.

or ſeven days. In many fatal caſes, however, it is protracted for a longer time, eſpecially where the remiſſions have been conſiderable.

Such are the ſymptoms of the only form of phrenitis which, as far as I am capable of judging, deſerves the name, for the comatoſe phrenitis differs in no eſſential from apoplexy. It is true indeed, that the furious and comatoſe phrenitis by imperceptible degrees run into each other; for as phrenitis on the one hand runs into ſynocha; on the other, it runs into apoplexy.

From what has been ſaid of congeſtion and inflammation, we may ſee why coma ſupervening on delirium in phrenitis, generally proves fatal: if, while the capillaries are debilitated, the larger veſſels, ſupplying the vis a tergo which ſupports the circulation in them ſhould greatly partake of the debility, there will be little hopes of reſtoring the action of the former. But in thoſe caſes where the congeſtion of the larger veſſels, and conſequently the coma has been preſent from the beginning, the capillaries have never been much diſtended, the vis a tergo propelling the blood into them, having, from the firſt attack of the diſeaſe, been enfeebled; they therefore ſupport the circulation, and the hope of recovery is better.

SECT. II.

Of the Appearances on Diſſection.

It appears from diſſection, that inflammation of the brain, like other inflammations, may terminate in ſuppuration, or gangrene.*

But it ſometimes proves fatal without running to either of theſe terminations. The part affected then exhibits the ſame appearance as in external inflammations.

Inflammation of the brain generally appears in diſtinct ſpots, and for the moſt part ſpreads to the membranes in the neighbourhood of the parts affected. †

When the dura mater is inflamed, the number of red veſſels paſſing between it and the cranium is increaſed. Dr. Baillie obſerves, that there is ſometimes, though very ſeldom, a layer of coagulable lymph formed on its inner ſurface. It is alſo rare for adheſions to form between it and the pia mater. It often ſecretes pus. Sometimes, though rarely, it is found ulcerated, more frequently mortified.

The pia mater is not apt to adhere to the brain, but is ſometimes converted into a membrane reſembling the dura mater in thickneſs and conſiſtence. Dr. Baillie obſerves, that the proceſſes ariſing from the under ſurface of the pia mater

* The Sepulchretum Anatomicum of Bonnetus, the Epistles of Morgagni, Dr. Baillie's Treatise on Morbid Anatomy, &c.

† Dr. Baillie's Morbid Anatomy.

ſometimes adhere more ſtrongly than uſual to the brain. This membrane alſo frequently ſecretes pus, but very ſeldom forms a layer of coagulable lymph.

There is often a conſiderable effuſion into the ventricles. If a tendency to gangrene has taken place, the fluid effuſed is a thin acrid ſerum.

In thoſe who have laboured under phrenitis, and died afterwards of other diſeaſes, the membranes of the brain have been found thickened, and in ſome inſtances converted into a ſubſtance almoſt as hard as bone,* and the dura mater is ſometimes found firmly adhering to the ſcull in the places which had been occupied by the inflammation.

SECT. III.

Of the Cauſes of Phrenitis.

In temperate climates phrenitis is a rare diſeaſe, and when it does appear, it is generally as ſymptomatic of fever. In the works of Sir John Pringle, and a few other European practitioners, the reader will find an account of diſſections in which abſceſſes of the brain were found in thoſe who died of fever. This, however, is very rare.

It is in warm latitudes that idiopathic phrenitis moſt frequently occurs. Young people, eſpecially thoſe of a ſanguine and plethoric habit, are liable to it, and all who indulge freely in the uſe of fermented liquors.

* Van Swieten's Comment. in Aph. Boerh. Aph. 775.

The exciting cauſe can frequently be traced to an injury immediately applied to the brain, ſuch as violent exerciſe, intoxication, rage, the head being long expoſed to a warm ſun, long and intenſe ſtudy, or any other cauſe tending to occaſion an accumulation of blood in it.

It often ariſes, however, from cauſes leſs excluſively affecting the brain, cold, fatigue, exceſſive venery, indigeſtible and poiſonous ſubſtances received into the ſtomach, and the ſuppreſſion of habitual diſcharges.

It is evident that many or all of theſe may ſometimes act merely as prediſpoſing cauſes.

Saalman ſaw phrenitis epidemic, and aſſerts that it was contagious. It was chiefly confined to the loweſt ranks of the people, who were covered with filth; and the contagion, he obſerves, was rendered ſo virulent by a neglect of cleanlineſs, that in a ſingle hovel five or more were ſeized with the diſeaſe.

This epidemic attacked the old rather than the young, it was moſt fatal to thoſe above 40. The hypochondriacal and melancholic were moſt ſubject to it.

Phrenitis often ariſes in the prediſpoſed, when it cannot be traced to any particular cauſe, eſpecially in thoſe who have formerly laboured under it, for, like the other phlegmaſiæ, it leaves behind it a prediſpoſition to future attacks.*

* Van Swieten's Comment. in Aph. Boerhaavii.

SECT. IV.

Of the Treatment of PHRENITIS.

FROM what has been ſaid of the treatment of the phlegmaſiæ, and of the nature of phrenitis, the reader will infer that the moſt vigorous antiphlogiſtic meaſures are requiſite in this diſeaſe.

It fortunately happens that a ſufficient quantity of blood can generally be procured from the neighbourhood of the part affected, ſo that the ſame operation ſerves the purpoſe of both local and general blood-letting. Many therefore adviſe blood to be taken from the temporal artery in phrenitis. Dr. Cullen thinks blood-letting from the jugular vein preferable; which is alſo particularly recommended by Hoffman and Eller. The frantic ſtate of the patient, however, often renders it troubleſome to let blood from this veſſel.*

* Several other modes of blood-letting have been proposed in this disease. We have been advised to open the sublingual veins; this, however, is attended with several inconveniences. It is difficult to open them when the patient is delirious, a small orifice is not sufficient, and a large orifice is dangerons on account of the difficulty of stopping the bleeding. Some recommend opening the frontal vein, others, scarifying the nostrils. In neither of these ways, however, can we in general procure a sufficient qnantity of blood. If phrenitis be threatened, Hoffman observes, in consequence of the suppression of the

Dr. M'Bride recommends carrying the blood-letting to ſyncope. With regard both to its extent and repetition, our practice is regulated in the ſame way as in ſynocha, except that the evacuation ſhould be more copious in proportion to the violence of the ſymptoms.

It may be inferred from what has been ſaid of catharſis in inflammatory affections of the head, that when ſpontaneous diarrhœa ſupervenes, we ſhould be careful not to check it, and that when it does not, the free uſe of cathartics is proper in all caſes. Saalman gave calomel with other cathartics. Blood-letting, cathartics, and acidulous fluids he found the moſt ſucceſsful remedies.

To aſſiſt in diminiſhing the determination of the blood to the head, the patient ſhould be kept as nearly in the erect poſture as can eaſily be borne.

A very few obſervations on the local remedies employed in phrenitis will be ſufficient. Of theſe, local blood-letting is ſtill the moſt powerful, and in all caſes, where the blood in the general blood-letting is not taken from the head or neck, ſhould be employed at an early period.

The head ſhould be ſhaved, and, after the excitement has been ſufficiently reduced, a bliſter applied over it.

A variety of rubefacients have been applied to the head in phrenitis, the effects of which, eſpecially at an early period, are doubtful. The application of cold to the head is often

menstrual discharge, or lochia, venesection is to be performed from the foot, if by a suppression of the hæmorrhois, leeches should be applied to the hemorroidal vessels; concerning the efficacy of these practices, at least after the symptoms of phrenitis have actually appeared, there is much doubt. Local blood-letting appears always to be most successful when the blood is taken from the part affected, or as near it as possible. In the above cases, however, the application of leeches to the abdomen and hemorrhoidal vessels may assist more powerful remedies, and is a probable means of preventing a relapse.

beneficial; cloths dipped in cold water and vinegar, or iced water, are applied with advantage. Is the alternate use of cold and warm applications preferable? An irruption on the head has sometimes followed these applications, and very suddenly brought relief.

Warm bathing of the inferior extremities, and the application of rubefacients to them, have been very generally recommended. Dr. Cullen, however, regards them as ambiguous remedies. If they be employed before the excitement has been sufficiently reduced, they may do harm. Some recommend immersing the trunk and limbs in the warm bath, while cold applications are made to the head.

When phrenitis can be traced to the suppression of some discharge, attempts to restore the discharge must make a part of the treatment.

CHAP. VII.

Of Ophthalmia.

Ophthalmia is defined by Dr. Cullen, "Rubor et dolor "oculi, lucis intolerantia, plerumque cum lacrimatione." Except omitting plerumque, for a reason which will presently appear, the only alteration I would propose on this definition is similar to that proposed on the definition of phrenitis. Phlegmasia cum rubore et dolore, &c.

Here, however, the change proposed is of more import-

ance, and confines the definition to one ſpecies of ophthalmia. A defect in Dr. Cullen's mode of arrangement, which I have already had occaſion to conſider, is again felt here. The reader will obſerve, that fever makes no part of his definition of ophthalmia, and although he arranges ophthalmia among febrile diſeaſes, there is but one ſpecies of it, and that the leaſt common, which is attended with fever. It is evident, however, that this is the only ſpecies which belongs to the phlegmaſiæ. The others belong to the order of ſimple inflammations.

Dr. Cullen divides ophthalmia into idiopathic and ſymptomatic. It is the former only we are to conſider. The latter proceeds either from diſeaſes of the eye, or parts in its neighbourhood, and comes under the care of the ſurgeon; or from diſeaſes of the ſyſtem, ſcrophula, lues venerea, or fever. The laſt I have frequently had occaſion to mention; like it, the other ſpecies of ſymptomatic ophthalmia can only be conſidered with the diſeaſes of which they form a part.

Dr. Cullen divides the idiopathic ophthalmia into two varieties; the ophthalmia membranarum, and ophthalmia tarſi. The former he defines,

" Ophthalmia in tunica adnata et ei ſubjacentibus mem-
" branis ſive tunicis oculi."

The latter,

" Ophthalmia cum tumore, eroſione, et exudatione gluti-
" noſa tarſi palpebrarum."

Other writers have divided ophthalmia into many varieties; for moſt of their diſtinctions there appears to be no ſufficient foundation; but Dr. Cullen, as far as I am capable of judging, has attempted to ſimplify too much.

Had he made fever part of his definition of ophthalmia, he would have excluded by far the majority of caſes. He therefore, in his Noſology wholly overlooks that ſpecies of oph-

thalmia which almoſt uniformly occaſions fever, and in his Firſt Lines he regards it as only a greater degree of the ophthalmia membranarum ; and it is true, that the inflammation of the adnata often ſpreads to tbe deep-ſeated parts of the eye, and produces the form of the diſeaſe alluded to, but it alſo ſpreads to the tarſi, producing Dr. Cullen's ſecond ſpecies of ophthalmia, and the inflammation of the deep-ſeated parts often exiſts with little or no inflammation of the adnata, and produces a diſeaſe certainly as different from the ophthalmia membranarum and tarſi as theſe are from each other.

This ſpecies of ophthalmia has been termed ophthalmitis ; to which I have adapted the definition by introducing the term phlegmaſia, and omitting plerumque, the ophthalmitis being always attended with an increaſed flow of tears.

Ophthalmia then is divided into three ſpecies, according as it affects the eye-lids, the membranes which cover the anterior part of the eye, or the deep-ſeated parts of the eye, its muſcles, and the lachrymal gland.

It is very rarely, however, that any of theſe exiſt in a conſiderable degree without producing ſome degree of the others. The inflammation readily ſpreads along the conjunctiva, from the tarſi to the eye, or in the contrary direction. When the conjunctiva of the eye is much inflamed, the adnata ſoon partakes of the inflammation, and if the diſeaſe increaſes, it gradually ſpreads to the deep-ſeated parts. When, however, it firſt ſeizes on theſe parts, it is often very ſevere, and continues for a long time, without appearing externally.

From the connection of the ophthalmitis with the other ſpecies of ophthalmia, it will be proper to lay the ſymptoms of all before the reader ; and it will be the moſt diſtinct plan to conſider thoſe of each ſpecies ſeparately, beginning with the moſt common, the ophthalmia membranarum.

SECT. I.

Of the Symptoms of Ophthalmia.

THE tunica conjunctiva, is the chief ſeat of the ophthalmia membranarum. It was formerly doubted whether this membrane covers the cornea, by later anatomiſts it has been diſſected from this as well as from the tunica albuginea; to the former, however, it adheres much more firmly. In the eye of ſome quadrupeds, particularly that of the ox, the conjunctiva is ſeparated from the cornea more readily.

The part of the conjunctiva covering the cornea is leaſt ſubject to inflammation. Neither in this part nor that covering the albuginea while in a perfectly healthy ſtate, are there any red veſſels That part of the conjunctiva which lines the eyelids, however, is at all times ſupplied with red blood.

Ophthalmia ſometimes comes on almoſt inſtantaneouſly. In general, however, its attack is more gradual.

The firſt ſymptom of the ophthalmia membranarum is an unuſual redness of the conjunctiva covering the albuginea. The redneſs is ſometimes diffuſed over the whole albuginea, and ſometimes appears in pretty well defined blotches on different parts of it. I have obſerved it come on in this way in both eyes at the ſame time, where the injury was not applyed to any part in particular.

In general the red veſſels appear ramified on the albuginea, but in more ſevere caſes it is ſo completely covered by a thick net-work of veſſels, that it ſeems as if uniformly painted of

a red colour, and then ſome red veſſels can generally be traced on the cornea.

At the ſame time the inflammation ſpreads along the conjunctiva lining the eye-lids, and often extends to the tarſi.

The patient complains of a ſenſe of heat, and of a pricking or ſtinging pain, frequently reſembling the ſenſation produced by a ſharp particle of duſt blown into the eye.

In mild caſes the ſenſation accompanying ophthalmia is rather an itching than pain. Sometimes the itching is felt not in the eye itſelf but in the forehead.

Although the inflammation has not ſpread to the lachrymal gland, ophthalmia membranarum, except in the mildeſt caſes, is very frequently accompanied with an increaſed flow of tears. It has hence been divided into wet and dry.

The ſecretion is ſometimes vitiated, becoming glutinous, adhering to the tarſi, and often during ſleep glueing them together. This ſymptom, however, is more troubleſome in the ophthalmia tarſi. Sometimes pus is ſecreted by the inflamed conjunctiva.

The mildeſt form of this ſpecies of ophthalmia, is termed taraxis. The more ſevere form, chemoſis.*

In the taraxis the ſwelling is generally inconſiderable and wholly confined to the eye-lids, for even in mild caſes of ophthalmia, the inflammation generally ſpreads to the conjunctiva lining the eye-lids. In the chemoſis the ſwelling of the eye-lids is often ſo great, that the tarſi are turned inwards upon the ball of the eye, the irritation of the eye-laſhes rubbing againſt the conjunctiva increaſing the inflammation: or the eye-

* Trnka's Historia Ophthalmiæ. The reader will find a good account of chemosis in the 127th and following pages of Vogel' Prælectiones Academicæ.

lids are almoſt inverted, the tarſi being turned outwards and the eye remaining open.*

But in the more ſevere caſes, the ſwelling is not confined to the eye-lids; the coats of the eye partake of it. "Conjunc-" tivam," Schmuckerus obſerves, "ab accumulato ſanguine "uſque adeo tumuisse obſervatum eſt, ut tres quatuor pluresve "lineas craſſa fuerit."† So great a degree of ſwelling in the conjunctiva is uncommon, but the coats which lie under it partaking of the ſwelling, it often appears upon the whole very conſiderable.

As this, like the other ſymptoms, is generally leſs conſiderable in the cornea than the other parts of the eye, it often appears ſunk in a hollow formed by the tumified coats. "Son "épaiſſeur," St. Yves‡ obſerves, "égale celle d'un travers "de doigt, ce qui fait paroitre la cornée tranſparente comme "dans un enfoncement."

When the ſwelling of the eye and eye-lids is ſuch that the patient is unable to open the eyes, the diſeaſe has been called phymoſis, the name of a ſimilar affection of the penis. The degree of ſwelling in the worſt caſes of the ophthalmia membranarum is ſometimes aſtoniſhing; we find one author relating a caſe in which the tumor equalled a man's hand, and another declaring that he has ſeen the eye ſo far protruded from the ſocket, that it reſted on the upper lip.

In ſuch caſes the inflammation not only ſpreads to every part of the eye and eye-lids, but to the whole ſide of the face; the cheek becomes ſwelled and inflamed, and the patient complains of violent pains in the forehead and temples.

* Vogel Præl. Acad. de Cog. et Cur. Morb.

† Trnka, Historia Ophthalmiæ.

‡ Traité des Maladies des Yeux, by St. Yves. See also Vogel's Præl. Acad.

Although the diſeaſe is at firſt confined to one eye, when it becomes conſiderable, the other always partakes of it.

The intolerance of light in the leſs violent caſes of ophthalmia membranarum ſeems to proceed from the ſympathy which ſubſiſts between the retina and other parts of the eye. In the worſt caſes the retina itſelf is inflamed, and complete ophthalmitis ſupervenes.

Spaſms of neighbouring parts, particularly of the eye-lids, often attend ophthalmia. In the more ſevere caſes they ſometimes ſpread to all the muſcles of the face.

It was obſerved above, that external inflammations are leſs apt than internal to produce fever, and that inflammations of the head are apt to produce fever in proportion to their vicinity to the brain. In all caſes in which fever is ſymptomatic of ophthalmia, we have reaſon to believe that the inflammation has ſpread to the deeper-ſeated parts.

Such are the ſymptoms which attend the commencement and progreſs of ophthalmia membranarum; its conſequences are very various.

Like other inflammations it is ſubject to reſolution, ſuppuration, and gangrene.

If the inflammation be confined to the eye, reſolution is the only termination which can be regarded as favourable; for according to the definition of ſuppuration I have adopted, a diſcharge of pus without ulceration, which frequently takes place from the eye and has given riſe to the name purulent ophthalmia, does not deſerve the name of ſuppuration. When the eye-lid partakes much of the inflammation, ſuppuration is often a favourable termination. If the abſceſs is diſcharged on the inner ſide of the eye-lids, it frequently proves very troubleſome.

The effects of ſuppuration of the eye itſelf are different in

different caſes, but as this part of the ſubject belongs to the province of the ſurgeon, I ſhall not enter upon it here.*

Mortification is a rare occurrence in any form of ophthalmia, and never perhaps ſupervenes in the ophthalmia membranarum, unleſs it be complicated with the ophthalmitis.

Beſides the terminations common to all caſes of inflammation, ophthalmia is ſometimes followed by conſequences reſulting from the nature of the parts it occupies. For theſe, which alſo belong to the province of the ſurgeon, the reader is referred to the works juſt alluded to.

In its attack the ophthalmia tarſi often reſembles the ophthalmia membranarum, the inflammation firſt appearing on the eye, or to ſpeak more accurately, the former often follows a ſlight attack of the latter. The inflammation, however, ſoon ſpreads to the tarſi, where it frequently indeed makes its firſt appearance, but it ſeldom becomes conſiderable there, without affecting the conjunctiva of the eye.

The tarſi are red and ſwelled, and pour out a glutinous matter which glues the eye-lids together during ſleep, and both in this way, and by forming ſmall hard maſſes adhering to the eye-laſhes, increaſes the diſeaſe.

The patient complains of a conſtant uneaſineſs of the eyes, but never of the ſevere pain which ſometimes attends the ophthalmia membranarum. The uneaſineſs is increaſed by the falling off of the eye-laſhes which defend the eye from ſtrong light, duſt, &c.

Both the ophthalmia membranarum and tarſi are apt to become chronic diſeaſes, but the latter much more frequently than the former. It is not uncommon, particularly in ſcro-

* See these effects detailed in Mr. Ware's Treatise on Ophthalmia, and other late works on the Eye.

phulous habits, for the ophthalmia tarſi to laſt for the greater part of life, but it is leſs apt to be followed by injury of the ſight than the ophthalmia membranarum. It more frequently runs to ſuppuration than the other varieties of ophthalmia, ſmall ſuppurations often forming at the ſame time in various parts of the tarſi, and frequently without conſiderably relieving the inflammation. Except when combined with ophthalmia membranoaum, it never runs to gangrene.

It often happens when the ophthalmia tarſi is attended with much ſwelling, as where it is accompanied with a conſiderable degree of the ophthalmia membranarum, that the eye-lids grow together. This is the conſequence of ſmall ſuppurations forming on the tarſi, or of the cuticle being abraded by the acrimony of the diſcharge.

When inflammation attacks the deep-ſeated parts of the eye, it gives riſe to one of the moſt tormenting diſeaſes we are ſubject to. It is termed by ſome ophthalmitis, by others phlegmon oculi, ſome term it chemoſis, the appellation generally uſed for the ſeverer caſes of the ophthalmia membranarum.

It ſometimes comes on without being preceded by either of the other ſpecies of ophthalmia, and it now and then happens, as I have already had occaſion to obſerve, that the anterior parts of the eye remain free from inflammation. In many caſes, however, the anterior parts are firſt affected, and the inflammation ſpreads gradually to the deep-ſeated, ſometimes leaving the former. As ſoon as the inflammation ſpreads to the deep-ſeated parts, the pain becomes more ſevere, extending to the temple and over a great part of the head, often particularly felt, St. Yves remarks, on the crown of the head. It is generally increaſed by the ſlighteſt preſſure of the eye.

When the inflammation ſeizes the lacrymal gland, there is

a ſevere pain referred to its ſeat, the flow of tears is very great, and ſome protuberance of the upper eye-lid may often be obſerved.*

As ſoon as the retina partakes of the inflammation, the ſight becomes confuſed, every thing is ſeen covered with black ſpots, inceſſant clouds paſs before the eyes, or fire ſeems to dart acroſs them. As the diſeaſe increaſes, the intolerance of light becomes extreme, and the patient is often ſeized with a degree of phrenzy, if the eyes be expoſed to it.

Theſe ſymptoms never laſt long without producing fever; and when the pain of the eye is great, delirium is not uncommon.

With one or both eyes thus affected, he paſſes ſleepleſs nights, always in ſevere pain, and often in excruciating torture.

When the retina is much affected, the diſeaſe ſometimes terminates in amauroſis.†

It is unneceſſary to obſerve, that reſolution is the only favourable termination of ophthalmitis. Suppuration is often attended with a general efflux of the humours; and gangrene, while it proves as deſtructive to the eye, endangers life.

We judge of the tendency to theſe terminations in the ſame way as in the other phlegmaſiæ. When the ſymptoms are moderate, and yield to the uſual remedies, we have reaſon to hope for reſolution; when they are unuſually obſtinate, ſuppuration is to be dreaded; when unuſually violent, gangrene.

With reſpect to ſchirrus, regarded by many as a conſequence of ophthalmia; it ſeems to proceed leſs from the inflammation, than peculiarity of habit.

* Lieutaud's Synopsis Medicinæ Praxeos.

† Lieutaud's Synopsis Trnka's Historia Ophthalmiæ.

Like other febrile diſeaſes ophthalmitis is occaſionally terminated by critical evacuations, by ſpontaneous hemorrhagy, ſweat, or diarrhœa.

SECT. II.

Of the Cauſes of Ophthalmia.

THE different ſpecies of ophthalmia may appear at any age and in any habit. In the young, robuſt, and ſanguine, the ophthalmia membranarum and ophthalmitis are moſt common. The ophthalmia tarſi is more apt to attack thoſe of a delicate habit or of an advanced age.

Thoſe who have already laboured under ophthalmia are moſt liable to it.

The ſcrophulous ophthalmia at leaſt, is often hereditary.

It is more frequent in ſpring and autumn, particularly in the former, than when the weather is leſs variable.

Among the prediſpoſing cauſes may be ranked the diſeaſes in which ophthalmia moſt frequently ſupervenes. It more frequently accompanies ſynocha than typhus, and ſome of the axanthemata, we have ſeen, more frequently than either; particularly, meaſles, ſmall-pox, and ſcarlatina. It is a frequent attendant on all inflammatory affections of the head.

Dr. Cullen arranges the exciting cauſes of ophthalmia under ten heads; and numerous as his catalogue is, he ſeems to have omitted many. The ſituation, uſe, and extreme delicacy of the eye, render it ſo ſubject to injury, that there

is no diſeaſe, perhaps, which may ariſe from a greater variety of cauſes.

Dr Cullen's firſt diviſion of the exciting cauſes of ophthalmia is, "External violence, by blows, contuſions, and "wounds applied to the eyes, and even very ſlight impulſes "applied, whilſt the eye-lids are open, to the ball of the eye "itſelf."

Theſe cauſes may excite inflammation of the eye in the ſame way in which mechanical injury excites inflammation in any other part; but they may alſo act only indirectly, by occaſioning ſome derangement in the ſtructure of the eye, which often proves a more obſtinate cauſe of inflammation. In conſequence of a blow on the eye, for example, the cryſtalline lens has ſometimes been forced through the iris into the anterior chamber of the eye, where it has lain for years, or even the greater part of life, occaſionally exciting this diſeaſe.*

A blow on the eye may occaſion an extravaſation of blood under the conjunctiva, which is abſorbed very ſlowly; the quantity is ſometimes ſo great as to diſtend the conjunctiva; at other times, it forms only a red ſpot or blotch. Before the extravaſated blood is abſorbed, it becomes dark and livid. It ſeldom excites much inflammation, nor leaves any permanent affection of the ſight; where theſe happen, the cauſe which produced the extravaſation has at the ſame time otherwiſe injured the eye.

That wounds with ſharp inſtruments may in various ways ſo derange the ſtructure of the eye as to leave it ſubject to ophthalmia, may be readily conceived.

Dr. Cullen's ſecond ſet of cauſes, is, "Extraneous bodies

* The reader will find two cases of this kind related by Mr. Noble, in his Treatise on Ophthalmia.

" introduced under the eye-lids, either of an acrid quality, " as ſmoke and other acrid vapours, or of a bulk ſufficient " to impede the free motion of the eye-lids upon the ſurface " of the eye-balls."

To this head belongs ophthalmia from the eye-laſhes growing in upon the eye, which happens either from the tarſi being turned inwards, or from the growth of preternatural hairs. When the diſeaſe proceeds from an inverſion of the tarſi, it has been termed trichiaſis.

" 3. The application of a ſtrong light, or even of a mo- " derate light long continued.

" 4. The application of much heat, particularly that with moiſture." To this diviſion may be referred the ophthalmia cauſed by weeping, or by the tears being confined by the ſwelling of the eye-lids, as frequently happens in meaſles, or accumulated and falling over the cheeks where the paſſage from the lacrymal ſack is obſtructed, forming the diſeaſe termed by ſurgeons fiſtula lacrymalis.

" 5. Much exerciſe of the eyes in viewing minute ob- " jects."

" 6. Frequent intoxication."

Dr. Cullen's ſeventh, eighth, and tenth diviſions of the cauſes of ophthalmia belong to ſymptomatic ophthalmia, namely,

" 7. Irritation from other and various diſeaſes of the " eyes."

" 8. An acrimony prevailing in the maſs of blood, and " depoſited on the ſebaceous glands on the edges of the eye- " lids."

" 10. A certain conſent of the eyes with the other parts " of the ſyſtem, whereby, from a certain ſtate of theſe parts, " either a ſimultaneous, or an alternating affection of the " eyes is produced."

In the eighth diviſion, Dr. Cullen alludes to the ophthalmia, which ſometimes accompanies ſcrophula, lues venereal and ſome other diſeaſes. It would be foreign to the object of this treatiſe to enter into the diſpute, whether there really be ſuch a diſeaſe as the venereal ophthalmia,* or whether ophthalmia ever ariſes from the abſorption of pus.

The cauſes included in Dr. Cullen's ninth diviſion may produce either ſymptomatic or idiopathic ophthalmia. "A "change in the diſtribution of the blood, whereby either a "more than uſual quantity of blood, and with more than "uſual force, is impelled into the veſſels of the head, or "whereby the free return of the venous blood from the veſ-"ſels of the head is interrupted." Hence the ophthalmia ſymptomatic of ſynocha, of apoplexy, &c. and hence, alſo ophthalmia from violent exerciſe, &c.

There are ſome cauſes of idiopathic ophthalmia, however, not referable to any of the foregoing heads.

Ophthalmia, like moſt other inflammations, often ariſes from cold, eſpeciallp if alternated with a high temperature, and combined with moiſture. The application of cold to the eye itſelf ſometimes produces it in the prediſpoſed. Cold more frequently has this effect, however, when applied to the body in general, and particularly to the extremities. Hence the frequency of ophthalmia in cold, moiſt, and variable weather.

Certain ingeſta ſometimes produce it in the prediſpoſed. Inſtances are related by Trnka and others, in which a ſmall quantity of certain fermented liquors produced ophthalmia, while the patient could take many times the quantity of alkohol in any other form without experiencing the ſame effect.

* See the Treatises of St. Yves, Mr. Ware, and others.

Whatever indeed produces much irritation of the primæ viæ, may excite it in the predispoſed.

The ophthalmia which ſometimes accompanies conſiderable derangement of the ſtomach and bowels, from worms for example, lodged in theſe cavities, may be regarded rather as ſymptomatic than idiopathic.

Caſes are mentioned by Dr. Whytt of Edinburgh, and others, of people ſubject to diſorders of the ſtomach, who never had an attack of this kind, without, at the ſame time, ſuffering from ophthalmia, a remarkable inſtance of which I have frequently witneſſed. The reader will find caſes (one is related by Trnka) in which ophthalmia was induced by hypercatharſis. The oppoſite ſtate of the bowels is a more frequent cauſe of it. There is reaſon to believe that theſe cauſes act chiefly by the irritation they occaſion. They may partly, however, be referable to Dr. Cullen's ninth diviſion. Are the following cauſes referable to the ſame diviſion? A check given to perſpiration: The retroceſſion of inflammation of the ſurface, or of eruptions of various kinds: The ceaſing of habitual hemorrhagies or other diſcharges, and the ſubſiding of tumors.

It is an opinion as old as Ovid, that ophthalmia is contagious; and that that ſpecies of it which prevailed among our troops in Egypt, and is remarkable for its ſeverity, the ſuddenneſs of its attack, and the copious purulent ſecretion from the conjunctiva, is ſo, we cannot doubt.

It is alſo a popular opinion that the tears of thoſe labouring under ophthalmia, may, if applied to the eye, produce the diſeaſe.

In ſpeaking of the cauſes of diſeaſes, a circumſtance which greatly multiplies the exciting cauſes ſhould be kept in view. Where a ſtrong prediſpoſition exiſts, almoſt every thing which deranges the ſyſtem, or affects the ſeat of the diſeaſe, acts

occaſionally as an exciting ca ſe, although it may have no power to produce the diſeaſe in the unprediſpoſed. This obſervation is particularly applicable to ſome of the foregoing cauſes of ophthalmia.

SECT. III.

Of the Treatment of OPHTHALMIA.

THE indications in the treatment of ophthalmia when attended with fever, are the ſame as in the other phlegmaſiæ.

1. To remove the remote cauſes if they ſtill continue to act.
2. To diminiſh the vis a tergo.
3. To excite the debilitated veſſels of the part.

In many caſes the application of the remote cauſes is only momentary, as in ophthalmia from blows and wounds; or they are ſuch as we have no means of removing.

When ophthalmia ariſes from hard particles introduced under the eye-lids or adhering to the eye, theſe muſt in the firſt place be removed. This the patient often inſtinctively does by rubbing the eyes, which both increaſes the flow of tears occaſioned by the extraneous body, and by moving it from place to place promotes its expulſion. Immerſing the eye in an eye-cup filled with water, and opening it, is often ſucceſsful; or if many particles have entered the eye, it may be gently ſyringed with warm water. When the offending cauſe lies under the upper eye-lid, it is ſometimes neceſſary

o invert the lid. When it adheres to the cornea or othe parts of the eye with ſuch force as reſiſts gentler means, it muſt be removed with the point of the lancet, or as Mr. Ware adviſes, with a blunt pointed ſcoop.

One of the moſt troubleſome cauſes of ophthalmia is an inverſion of the eye-lids, ſo that the eye-laſhes preſs on the ball of the eye.

For the means of removing theſe and other ſuch cauſes, I muſt refer to the ſurgical works above alluded to.

If ophthalmia proceed from irritating matter in the ſtomach and inteſtines, it muſt be removed by cathartics; if from hypercatharſis, we muſt have recourſe to aſtringents and anodynes; if from ſuppreſſed perſpiration, to diaphoretic s.

If it ariſe from the drying up of ſores or iſſues, or the ſuppreſſion of hemorrhois, we muſt reſtore the diſcharge; if from the retroceſſion of eruptions, the means of recalling theſe pointed out in ſpeaking of eruptive fevers, muſt be reſorted to. Heat and light are the cauſes of ophthalmia moſt frequently applied after the commencement of the diſeaſe. The evident advantage derived from excluding the light has given riſe to various contrivances, which, by increaſing the temperature of the eye, often do more harm than good. The light ſhould be excluded without preventing the acceſs of cool air. In ſevere ophthalmia, the patient ſhould be confined to a dark well ventilated chamber. The total excluſion of light is not neceſſary where the inflammation is ſlight. But exerciſe of the eye muſt be avoided in all caſes.

The morbid ſecretion from the inflamed eyes ſhould frequently be waſhed off. Of the compoſition of the lotion we ſhall preſently have occaſion to ſpeak. The gluing together of the eye-lids ſhould be prevented by interpoſing between them ſome mild ointment. By the ſame means the

diſcharge may be prevented from forming into ſmall hard maſſes on the tarſi.

As every thing which occaſions a determination of blood to the head may increaſe ophthalmia, much exerciſe is to be avoided, and every other cauſe which increaſes the rapidity of the circulation, and the head ſhould be raiſed when the patient is in bed.

Having as far as we are able, removed the cauſes of ophthalmia, we muſt endeavour more directly to allay its ſymptoms.

Catharſis, independently of its removing irritating matter from the primæ viæ, produces the ſame good effects in ophthalmia as in other inflammations of the head, and is of great ſervice, whether the diſeaſe be accompanied with fever or not; with this exception, the means which diminiſh the general excitement are of comparatively little ſervice where the diſeaſe is merely local. Their employment therefore, is chiefly confined to the ophthalmitis; and reſpecting it there is little to be ſaid in addition to what was delivered when ſpeaking of the treatment of the phlegmaſiæ in general.

As in phrenitis, blood-letting from the temporal artery or jugular vein is more effectual than from the arm. In the worſt-caſes of ophthalmitis, the inflammation, we have ſeen, ſpreads to the brain; the diſeaſe is then to be treated in the ſame way as phrenitis.

With regard to the other evacuations affecting the whole ſyſtem, diaphoreſis is always beneficial, when it is general and excited without much increaſe of temperature and heating medicines; it is particularly indicated, I have juſt had occaſion to obſerve where the diſeaſe has ariſen from cold, or other cauſes checking perſpiration.

While we are endeavouring to diminiſh the vis a tergo by evacuations, we muſt be careful not to increaſe it by improper diet. The food ſhould be of the mildeſt kind, and, in order to defend the ſtomach and bowels againſt the irritation of their contents, mucilaginous. In the more ſevere caſes it ſhould conſiſt chiefly of ſome mild farinaceous decoction.

We may ſometimes produce a local evacuation ſufficient to relieve ophthalmia, by increaſing ſome of the neighbouring ſecretions; that of the tears, of the mucus of the noſe, or of the ſaliva.

Few ſubſtances, however mild, can be applied to the eye without occaſioning an increaſed ſecretion of tears, and the various collyria, which we ſhall preſently have occaſion to conſider as otherwiſe uſeful, may be of ſervice in this way. But certain acrid ſubſtances which have been employed merely with a view to increaſe the ſecretion of tears, generally do more harm than good.

Authors are much divided in opinion reſpecting the employment of errhines in ophthalmia. Trnka, who gives caſes in which they ſeemed to be of ſervice, and ſome others warmly recommend them, while many pronounce them at all times inadmiſſible.

The ſudden determination of blood to the head which they occaſion would, a priori, induce us to decide againſt them; there are probably caſes in which they may be uſed with advantage, but as it is very difficult to diſtinguiſh theſe caſes, errhines, if not wholly abandoned in ophthalmia, muſt be uſed with caution.

Two cautions particularly inſiſted on by Trnka are never to be overlooked in their employment, that they ſhould be delayed till the excitement has been reduced, and that the more gentle errhines only ſhould be employed. Trnka recom-

mends a mixture of calomel and ſugar. " Vidi ſolius hujus " pulveris uſu, magnas contumaceſque ophthalmias fuiſſe " profligatas."

Sialogogues are ſafer remedies, but little to be depended on. Some aſſert that they have ſeen even ſevere caſes yield to them. They may be uſed in the ſolid, or liquid form, or in the form of vapour. The liquid form is the leaſt, and that of vapour the moſt, powerful. Moſt acrid vapours which are innocent may be employed ; that of tobacco is among the moſt effectual, but its employment requires much caution.

It has been propoſed to induce ſalivation by mercury received into the ſyſtem, in the worſt caſes of ophthalmia, even where no venereal taint is ſuſpected.

The means which increaſe the ſecretion from the ſkin of the head are more powerful. Trnka relates caſes in which they ſucceeded after every other remedy had failed. A general application of watry vapour to the head ſoon induces profuſe perſpiration, and if it be ſupported for ſome time, paleneſs of the countenance, giddineſs, and at length even ſyncope.

It ſeems to be of little uſe to impregnate the vapour with medicine, as it is not from its effects on the eye that we expect benefit.

But of all local evacuations none is ſo effectual as blood-letting. I have already mentioned bleeding from the temporal artery and jugular vein as at once anſwering the purpoſe of both local and general blood-letting ; the former is moſt effectual when performed neareſt to the ſeat of the diſeaſe. " Opening the temporal artery," ſays Mr. Ware, " is " on all hands allowed to be a mode of bleeding the moſt ef- " fectual as well as ſpeedy for the purpoſe." He alſo propoſes dividing this artery to leſſen the ſupply of blood to the inflamed part.

Will compreſſion of the temporal artery relieve the ſymptoms of this diſeaſe?

Leeches are applied to the eye-lids, and even to the inner canthus. By ſome we are diſſuaded from applying them ſo near the eye, as they ſometimes occaſion ſwelling of the eye-lids, and even a temporary increaſe of the inflammation. The temple and upper part of the cheek appear, upon the whole, to be the beſt places for their application.

Scarifying and cupping the temples or parts behind the ears are often practiſed with ſucceſs. Scarifying the back of the head, a common practice in ſome parts of the Continent, is leſs effectual.

It has been propoſed to bleed from the eye itſelf. The reader will find various means for this purpoſe detailed in Mr. Ware's treatiſe above referred to, the ſimpleſt is opening the turgid veſſels of the conjunctiva with the point of a fine lancet.

In all the more ſevere caſes of ophthalmia, general and local blood-letting are the remedies chiefly to be relied on, and they cannot be employed too early. "Nam ab initio ſanguis "mittendus eſt, cum id poſtea fieri non poſſit, inflammatione "enim ad ſuppurationem nunc diſpoſita, oculus jam perditus "eſt."* In the Egyptian ophthalmia, the characteriſtic ſymptoms of which I have had occaſion to mention, it is often neceſſary to carry the blood-letting to ſyncope. Even in the more common forms of the diſeaſe, Boerhaave ſays he has ſometimes ſeen it carried to this extent before the ſymptoms were at all relieved.

Bliſters are often a powerful auxiliary to blood-letting. The temples, parts behind the ear or the nape of the neck, are the proper places for their application. If applied between the

* Boerhaave de Morbis Oculorum

ſhoulders they muſt be large. In obſtinate caſes it is ſometimes proper to ſhave the head and apply a large bliſter over it. Boerhaave talks of bliſtering as a doubtful practice in ophthalmia, and if bliſters be employed early when the fever is conſiderable, they may do harm, as in other phlegmaſiæ, by increaſing the vis a tergo.

In this, as in all other inflammatory affections of the head, rubefacients applied to the feet were once a favourite remedy. The pediluvium is ſtill much employed, and frequently with advantage, eſpecially where the local affection is conſiderable compared with the increaſe of the general excitement.

It often happens where relief has been obtained by bliſtering, that the ſymptoms increaſe on the ceaſing of the diſcharge; it is then proper to ſupport it for ſome time by dreſſing the bliſtered part with iſſue ointment; and when ophthalmia becomes habitual, we often find it neceſſary by iſſues to keep up a diſcharge for months or even years. A ſeton in the neck is the moſt effectual iſſue in ophthalmia.

As it is of conſequence to have the iſſue as near as poſſible to the ſeat of the inflammation, ſome have recommended an iſſue in the lobes of the ears, which Dr. M'Bride ſays he has found more effectual than any other. The lobes of both ears are pierced, and the diſcharge ſupported by paſſing through the holes ſmall pieces of ſilk wrapt up and covered with ointment, by the quality of which, the diſcharge may be increaſed or leſſened at pleaſure.

Such are the local evacuations employed in ophthalmia. In certain ſpecies of this diſeaſe various applications are made to the eye in the form of lotion, ointment or poultice. The moſt powerful of thoſe derived from the vegetable kingdom, are opium, wine, diſtilled ſpirits, and eſſential oils, properly diluted; balſams, gums, acetous-acid, various aſtringents, ſuch as oak-bark and galls, ſome nutral ſalts, &c. Mr. Ware's

obſervations on the application of opium to the inflamed eye, are particularly deſerving of notice. Mr. Thomas in his obſervations on the Egyptian ophthalmia, ſpeaks very highly of the effects of pot-aſh. From the mineral kingdom the preparations of mercury, lead, zink, and copper are powerful ingredients. Some ſalts derived from this kingdom are alſo employed. Alum is often uſeful, particularly in habitual ophthalmia. In many caſes warmth, and in ſome electricity are beneficial. For the uſe of theſe various means, and the choice to be made in different caſes, as well as the manner of preparing the different applications, I muſt refer to the works on the ſubject.

In ophthalmitis, the only form of the diſeaſe which, ſtrictly ſpeaking, belongs to the department of the phyſician, eye-waſhes either have no place, the anterior parts of the eye not being inflamed; or when they partake of the inflammation, are a doubtful remedy. I have ſeen them evidently injurious, whatever relieves the inflammation of the anterior parts appearing to increaſe that of the deep-ſeated.

It is often neceſſary to use means to prevent the return of ophthalmia. Iſſues, one of the moſt powerful for this purpoſe, I have already had occaſion to mention. Its recurrence ſeems often connected with a debilitated ſtate of the habit, and then the beſt means of prevention are thoſe which tend to correct this ſtate, and in particular to ſtrengthen the veſſels of the eye, which will ſometimes even remove habitual ophthalmia when all other means have failed.

One of the moſt powerful is the cold bath, and the ſhower bath is here perhaps the beſt mode of uſing it. Shaving the head and merely applying to it every morning a cloth dipt in very cold water, and even applying cold water to the eyes themſelves or behind the ears, is often of great uſe.

For the ſame purpoſes the bark and wine have been ſucceſsfully employed.

Ophthalmia has ſometimes accompanied the fits of an intermittent ceaſing during the apyrexia, and has ſometimes continued to recur at certain intervals after the fever has been removed. In both theſe caſes the bark given during the intervals is the beſt means of cure.

It is by correcting ſome fault of the habit that a courſe of mercury, and more rarely the internal uſe of the muriat of ammonia has been known to remove chronic ophthalmia.

Various other medicines have been employed internally for this purpoſe, and to prevent the return of the diſeaſe. Of theſe, the cicuta appears to promiſe moſt. But there is none of them on which much dependance can be placed. As the various conſequences of ophthalmia come under the department of the ſurgeon, their treatment is not to be conſidered here. The public have lately been put in poſſeſſion of ſeveral excellent works on theſe, and other diſeaſes of the eye.

CHAP. VIII.

Of Otitis *and* Odontalgia.

Inflammations of the ear and of the teeth and neighbouring parts, like inflammation of the eye, are for the moſt part unaccompanied by fever, the latter indeed almoſt uniformly ſo, and rather belong therefore to ſimple inflammations than to the phlegmaſiæ.

Very few nofologifts, for what reafon it does not appear, have admitted otitis into their fyftems, which is the more remarkable, becaufe, although while unaccompanied by fever, if we overlook the fufferings of the patient, which even in this cafe are often great, it is a difeafe of little importance; when attended with fever, it often affumes a very formidable appearance, delirium, coma, and convulfions fometimes fupervene, and it has even terminated fatally.

Vogel has given it a place. It is his 48th genus, and the 4th of the difeafes termed inflammatoriæ. He defines it,

"Inflammatio auris internæ, dolor immanis in aure, febris, "cephalalgia, agrypnia, delirium."

According to the mode of arrangement I follow, the only form of it which belongs to the difeafes we are confidering, may be defined,

Phlegmafia cum dolore auris internæ, nonnunquam cum delirio.

Otitis is produced by the fame caufes with other inflammations.

In the treatment of otitis we proceed on the fame principles as in that of ophthalmia. While it is merely a local affection, if we except cathartics, local remedies alone are neceffary. Local blood-letting, and blifters applied behind the ear, with warmth, are the beft means.

If the pain does not foon abate, and ftill more if it increafes, we may expect fuppuration. When the pain has been confined to the ear, and there is little or no fever, fuppuration is not to be dreaded. When the abfcefs burfts, the matter is difcharged by the meatus auditorius externus. It is then proper to fyringe the ear from time to time with fome mucilaginous and gently aftringent decoction.

The treatment muft be very different when the pain fpreads from the ears over the whole or a great part of the head, at-

tended with fever, eſpecially if delirium, coma, and convulſions ſupervene. It may then, Vogel obſerves, prove fatal even on the firſt day, and very often deſtroys the patient before the ſeventh.

The moſt powerful local and general means are now to be combined. There is reaſon to believe that the inflammation has ſpread to the brain, and the treatment is the ſame as in phrenitis.

Even the moſt violent forms of otitis, however, more frequently terminate in ſuppuration than in death, and if the brain has partaken of the inflammation, the ſuppuration of the ear generally relieves it.

But ſuppuration is then more formidable. The ſtructure of the whole internal ear is often deſtroyed, the bones being diſcharged through the meatus auditorius with much purulent, and often fetid matter.

Fiſtulous ulcers of the internal ear are ſometimes the conſequence of ſuppuration, which are very troubleſome, and may even prove fatal by ſpreading to the brain.

Moſt noſologiſts have given a place to Odontalgia. It is Dr. Cullen's 23d genus, and the 17th of his phlegmaſiæ. He defines it,

"Rheumatiſmus vel arthrodynia maxillarum a carie den-
"tium."

The tooth-ach is ſo rarely attended with fever that there is no form of it which can be regarded as a phlegmaſia.

Sauvages makes ſeven varieties of tooth-ach, dividing it according to the cauſes which produce it. 1. Odontalgia from a carious tooth; 2. from ſcurvy; 3. from catarrh; 4. from gout; 5. from child-bearing; 6. from an hiſterical habit; 7. from affections of the ſtomach. Beſides theſe, tooth-ach may ariſe from any of the cauſes of inflammation.

I have known it ſo intimately connected with the ſtate of the ſtomach, that for two months it conſtantly returned on the patient's taking any ſolid food. Even one mouthful of bread was ſufficient to occaſion ſuch a paroxyſm of pain, which generally continued from half an hour to two or three hours, that he was almoſt ſtarved, being ſupported ſolely by ſtrong ſoups and other fluids, no quantity of which he found capable of affording ſufficient nouriſhment, or even of allaying the calls of hunger. It was obſerved in the firſt volume, that fluids, however nutricions, if unmixed with any ſolid matter, are very imperfectly digeſted.

As tooth-ach is merely a local affection, local remedies alone, are for the moſt part neceſſary.

Where the tooth is apparently ſound, a large doſe of opium may be tried previous to extraction. This will always afford temporary relief, and by promoting the perſpiration, if the diſeaſe rather proceeds from cold than any fault of the tooth, will often remove it. A ſmall doſe, by quickening the circulation, frequently does more harm than good. When tooth-ach ariſes from the ſtate of the ſtomach, an emetic will frequently give relief, and in ſuch a caſe as that juſt alluded to, where it has become habitually connected with the ſtate of the ſtomach, ſtomachic medicines, particularly bitters and ſteel, afford a probable chance of cure. It is needleſs to mention various means of temporary relief, with which every one is acquainted.

The means of preventing the tooth-ach, which is always ſooner or later attended with decay of the teeth, demand ſerious attention. I believe they may all be arranged under three heads, cleanlineſs, means of obviating the effects of cold, and thoſe of ſtrengthening the gums.

To keep the teeth perfectly clean, they ſhould, after every meal, be freed from the ſmall pieces of aliment which often

lie between them till they putrify. The concretion which is apt to form on the teeth ſhould be prevented by carefully bruſhing them, and as ſoon as any appears it ought to be removed.

The effects of cold on the teeth are beſt obviated by habituating them to its application, which may be done moſt effectually by repeatedly waſhing the mouth morning and evening with cold ſalt and water.

If the tendency to tooth-ach proceeds from a fault in the gums, this muſt be corrected by ſtrengthening the ſyſtem in general, by the frequent uſe of ſtimulating and aſtringent applications to the gums themſelves, and by occaſionally bleeding them if they appear inflamed and ſpongy; but frequently bleeding them ſoon produces a habit which demands a conſtant repetition of the remedy.

CHAP. IX.

Of Cynanche.

Dr. Cullen defines cynanche, his 10th genus, and the 4th of the phlegmaſiæ,

"Pyrexia aliquando typhodes, rubor et dolor faucium, "deglutitio et reſpiratio difficiles, cum anguſtiæ in faucibus "ſenſu."

This diſeaſe he divides into five ſpecies, in moſt of which the ſymptoms, and in ſome the mode of treatment, are very different. Theſe differences ariſe partly from the nature of the

organs affected in the different ſpecies of cynanche, and partly from leſs evident cauſes.

The firſt ſpecies, the cynanche tonſillaris, he defines,

" Cynanche membranam faucium mucoſam et præcipue " tonſillas tumore et rubore afficiens, cum febre ſynocha."

His ſecond ſpecies I had frequent occaſion to mention in treating of the ſcarlatina, the cynanche maligna. It is defined,

" Cynanche tonſillas et membranam faucium mucoſam " afficiens tumore, rubore, et cruſtis mucoſis coloris albeſ- " centis vel cineritii, ſerpentibus et ulcera tegentibus; cum " febre typhode et exanthematibus."

The third ſpecies, the cynanche trachealis, is defined,

" Cynanche reſpiratione difficili, inſpiratione ſtrepente, " voce rauca, tuſſi clangoſa, tumore fere nullo in faucibus " apparente, deglutitione parum difficili et febre ſynocha."

The fourth ſpecies is the cynanche pharyngea.

" Cynanche cum rubore in imis præſertim faucibus; deg- " lutitione maxime difficili, dolentiſſima; reſpiratione ſatis " commoda et febre ſynocha."

The laſt ſpecies, the cynanche parotidœa, is defined,

" Cynanche cum tumore externo parotidum et maxilla- " rum glandularum magno; reſpiratione et deglutitione pa- " rum læſis; febre ſynocha plerumque leni."

The definition of cynanche muſt be adapted to the mode of arrangement I follow, and I would propoſe to omit rubor in this definition, in two of the ſpecies, there being no redneſs of the fauces; and to change deglutitio et reſpiratio to deglutitio vel reſpiratio, becauſe both of theſe functions are rarely impeded, unleſs two of the ſpecies are combined. I would alſo propoſe to include in the definition of the cynanche tonſillaris that of cynanche pharyngea. Theſe varieties of cynanche differ conſiderably when they are exquiſitely formed. But

the one is ſeldom preſent in any conſiderable degree without being attended with more or leſs of the other. Dr. Cullen declares, indeed, that he never ſaw a caſe of the true cynanche pharyngea, that is, a caſe in which the inflammation was confined to the pharynx; it almoſt conſtantly ſpreads in a greater or leſs degree to the tonſils and neighbouring parts. Beſides, the mode of treatment is in almoſt every inſtance the ſame in both caſes; and it will appear, from what is about to be ſaid of the ſymptoms of theſe forms of cynanche, that if we admit the cynanche pharyngea to be a diſtinct variety, we muſt admit another, the cynanche œſophagea, for the inflammation, we ſhall find, frequently attacks the œſophagus, and is ſometimes confined to it.

The following may be aſſumed as the definition of cynanche:

Phlegmaſia pulſu plerumque valido, nonnunquam debili, cum dolore faucium, reſpiratione vel deglutitione difficili, cum anguſtiæ in faucibus ſenſu.

The firſt ſpecies of cynanche then, according to the mode of arrangement I ſhall follow, includes the inflammation of the tonſils, velum pendulum, uvula, pharynx, and œſophagus. As the tonſils are the parts in moſt caſes principally affected, and it is rare for the others to be affected without ſome affection of them, we may, for the ſake of brevity, aſſume the term cynanche tonſillaris to expreſs the inflammation of all theſe parts; which may be defined,

Cynanche, pulſu valido membranam faucium et pharyngis mucoſam, præcipue tonſillas tumore et rubore afficiens, deglutitione difficili nonnunquam dolentiſſima.

The only alteration which, the mode of arrangement I follow renders neceſſary in the other definitions, is to inſert, pulſus validus and pulſus debilis, inſtead of ſynocha and febris ty-

phodes; ſymptomatic fevers, according to that mode of arrangement, forming a claſs of diſeaſes diſtinct from the idiopathic.

SECT. I.

Of the Cynanche Tonſillaris.

1. Of the Symptoms of the Cynanche Tonſillaris.

THIS diſeaſe generally begins with an uneaſy ſenſe of tightneſs about the fauces, which, when the inflammation occupies the pharynx, is deeper ſeated than when it occupies the tonſils and neighbouring parts.

The deglutition ſoon becomes more or leſs difficult and painful; in the former caſe more ſo than in the latter, for, while the inflammation is confined to the tonſils, velum pendulum palati, and uvula, the pain is rather while we are preparing to ſwallow, or in the very firſt act of ſwallowing, than during it. In moſt caſes, however, more or leſs of the inflammation ſpreads to the pharynx, and then the pain peculiar to both forms of the diſeaſe is perceived.

On inſpecting the fauces, the parts, as far as the inflammation extends, appear ſwelled and of a more florid red than natural, and here and there, particularly on the tonſils, ſmall white or yellow ſpecks are often obſerved. While theſe remain of a light colour, and the pulſe continues ſufficiently ſtrong and full, they never indicate danger.

The inflammation is generally confined to the parts which can be brought into view; it ſometimes, however, extends

along the œſophagus, which is known by the greater difficulty and pain of ſwallowing, as well as by the ſeat of the pain. In ſome rare caſes, I have juſt had occaſion to obſerve, the inflammation is wholly confined to the œſophagus. In theſe no morbid appearance preſents itſelf on inſpecting the fauces.

Whether the œſophagus be primarily affected, or the inflammation has ſpread to it from the fauces, it is a very alarming accident. Caſes have occurred in which, the cavity of the œſophagus being wholly obliterated by the ſwelling, the patient has been ſtarved to death. Even in leſs violent caſes the pain of ſwallowing is ſometimes ſuch, that he abſtains from food, and ſome have ſunk under the debility thus occaſioned.

The deglutition is now and then impeded by the inflammation's ſpreading in an oppoſite direction. It is not very common for the tongue to be affected in cynanche; in ſome caſes, however, it has been ſo much ſwelled as to fill the mouth, and wholly prevent deglutition, nay, it ſometimes, Tiſſot obſerves, becomes too large to be retained in the mouth, and is thruſt out, aſſuming a purple colour.

The pain during deglutition in cynanche ſeems often in a great degree to depend on the muſcles employed in this function, partaking of the inflammation; hence it ſeems to be, that fluids, contrary to what we ſhould, a priori, ſuppoſe, are ſwallowed with more pain than ſolids; in ſwallowing liquids, a greater number of muſcles being employed, and thoſe employed in both caſes acting more powerfully. The patient feels moſt difficulty in ſwallowing the ſaliva, partly owing to its being a fluid, and the quantity being ſmall, and partly to its becoming viſcid.

In ſome caſes, however, the ſaliva becomes thinner, and is poured out in great quantity. This, although it often relieves the inflammation, ſometimes proves a ſource of much

uneaſineſs. If the inflammation runs high, the exertion of ſpitting it out is attended with conſiderable pain; and when as happens in all the ſeverer caſes of cynanche tonſillaris, the diſeaſe extends to the pharynx, the pain of ſwallowing it is greater.

When the inflammation extends to the œſophagus, the pain of ſwallowing the thin ſaliva is ſometimes ſuch as to throw the patient into convulſions; * and to avoid ſwallowing it is not always optional, for the irritation it occaſions frequently excites involuntary attempts to ſwallow. This is particularly apt to happen during ſleep, as the ſaliva is then permitted to accumulate in the fauces, and it is generally owing to this cauſe, that the patient often ſtarts up with horror. The only ſituation in which he finds relief is lying in ſuch a poſition that the ſaliva may run from the mouth. Sleep is often wholly prevented by this ſymptom. Long continued ſleep, indeed, when the throat is much inflamed, by permitting the morbid ſecretion to accumulate in it, is generally injurious. The irritation occaſioned by the accumulation in the throat often excites frequent attempts to vomit, which may be miſtaken for an indication of a foul ſtomach.

The pain is generally greateſt when the patient attempts to ſwallow lying on the back; and when the œſophagus is much affected, the pain is often felt chiefly in the back, and is of the ſame kind with that produced by any acrid or bulky ſubſtance paſſing along the œſophagus. If the pharynx, and ſtill more if the œſophagus, be much inflamed, the fluid,

* Tissot says he has seen women in this disease thrown into convulsions from excess of pain every time they attempted to swallow the saliva. In the third vol. of the Physical Essays, the reader will find a case related by Dr. Monro, which in a striking manner exemplifies this symptom.

inſtead of paſſing to the ſtomach, is often returned by the mouth, thrown through the noſe, or into the wind-pipe, exciting a painful fit of coughing.

The inflammation is not apt to ſpread to the ſtomach. I had occaſion to obſerve, in ſpeaking of eryſipelas, that that ſpecies of inflammation ſometimes ſpreads along the œſophagus to the ſtomach; but eryſipelas of the fauces, which is more uniformly diffuſed, generally of a darker red, and attended with little ſwelling, is of a very different nature from the cynanche tonſillaris.

When the inflammation ſpreads to the trachea, the danger is very great. But the inflammation of this organ forms a diſtinct ſpecies of cynanche according to the foregoing diviſion; it is ſufficient here to remark, that we may ſometimes look for a concurrence of theſe ſpecies.

Although the inflammation ſpread no farther than the fauces properly ſo called, the breathing is often conſiderably affected. The more, we have ſeen, the diſeaſe partakes of the cynanche pharyngea, that is, the more the inflammation ſpreads towards the œſophagus, the more difficult is the deglutition; it is the reverſe with reſpect to the reſpiration, for if the inflammation be wholly confined to the pharynx and œſophagus, however violent it may be, the breathing is always free, but when its chief ſeat is in the tonſils, velum pendulum palati, and uvula, the paſſage of the air is often much contracted, and ſometimes almoſt cloſed; that by the noſe frequently is ſo, and the patient can only breathe with the mouth open.

In ſuch caſes it might be imagined that deglutition is wholly interrupted. This, however, very rarely happens, except where the tongue partakes conſiderably of the ſwelling, the tonſils, velum pendulum palati, and uvula, being very compreſſible.

The voice is often affected, becoming hoarſe and confuſed, and being ſometimes almoſt loſt, eſpecially where the ſwelling is conſiderable. The affection of the voice, however, is more remarkable in the cynanche trachealis than tonſillaris, and never attends the exquiſitely-formed cynanche pharyngea or the caſes in which the inflammation is confined to the œſophagus.

None of the neighbouring parts ſo frequently partake of this diſeaſe as the internal ear. The patient at firſt complains of a ringing, and a ſenſe of rattling in it when he ſwallows, and at length often of ſevere pain following the courſe of the euſtachian tube. A degree of deafneſs which frequently attends violent caſes of cynanche is probably owing to the ſwelling occaſioned by the inflammation obliterating this paſſage. When the deafneſs is complete, it muſt ariſe from ſome other cauſe.

In ſevere caſes, the whole face partakes of the diſeaſe, the eyes are inflamed, the cheeks ſwelled and florid. I have already had occaſion to obſerve, that the muſcles employed in deglutition generally partake of it, in the more violent caſes it often ſpreads to almoſt all the muſcles and more external parts of the neck, which becomes ſtiff, hard, ſwelled, and ſometimes red, and the ſublingual and other glands in the neighbourhood are often enlarged. This affection of the external, frequently relieves the internal, parts. The ſwelling which appears externally, however, proceeds in many caſes, not from the diſeaſe ſpreading to neighbouring parts, but from the ſwelling of the internal fauces. The enlarged tonſils in particular may often be perceived externally.

In mild caſes it is common for the inflammation to be chiefly confined to one of the tonſils at the commencement, and to leave it, or in ſome meaſure to leave it, when it attacks the other.

Such are the local ſymptoms of cynanche tonſillaris. It appears from what has been ſaid, that the difference between the ſymptoms of cynanche occupying the tonſils, velum pendulum palati, and uvula, and that occupying the pharynx, conſiſts chiefly in the former being often attended with ſome difficulty of breathing, on account of its having its ſeat in the paſſage which the air takes to the lungs; and in the latter being attended with more difficulty of ſwallowing, from its affecting parts more eſſentially concerned in the act of deglutition. In this form of the diſeaſe, we have ſeen, the inflammation ſometimes ſpreads to the œſophagus and the deglutition is wholly interrupted. On this account the cynanche pharyngea is a more dangerous diſeaſe than the cynanche tonſillaris ſtrictly ſo called. Beſides having its ſeat nearer to the ſtomach, the whole ſyſtem, according to the general rule, ſympathiſes more with this form of the diſeaſe. It is very rare for the ſwelling of the tonſils, velum pendulum, and uvula, to increaſe till it occaſions ſuffocation. This, however, has ſometimes happened.

The foregoing ſymptoms are ſeldom preſent to a conſiderable degree without being attended with thoſe of general derangement. In the mildeſt caſes the fever is hardly perceptible, and it is ſeldom ſo conſiderable in proportion to the local ſymptoms in cynanche tonſillaris, as in the cynanche trachealis and maligna. Theſe ſymptoms, however, never run high in this form of cynanche, without the pulſe becoming ſtronger, harder, and more frequent than natural; and all the uſual ſymptoms of fever ſoon ſhew themſelves. The thirſt is often great in proportion to the other febrile ſymptoms, particularly when the œſophagus is inflamed.

It ſometimes, though very rarely happens, that the febrile ſymptoms run ſo high as to endanger life. Even delirium and

coma ſupervene. Whether in ſuch caſes the brain or its membranes are affected (which there is reaſon to believe) has not been determined.

Thoſe who have ſeen only the more common caſes of cynanche tonſillaris, can form little idea of the appearance which it now and then aſſumes. As the return of the blood, Boerhaave obſerves, is obſtructed in the external jugulars by the ſwelling of the neighbouring parts preſſing on them, and he might have added, as Van Swieten has done, in all the veins of the neck by the dyſpnœa impeding the paſſage of the blood through the lungs, a ſwelling of the face, tongue, lips, and fauces is the conſequence; the tongue is thurſt out, diſtorted, and inflamed; the eyes are red, ſwelled, frightfully ſtaring, and puſhed from their ſockets; the brain is compreſſed and overpowered, the ſight, hearing, and touch being impaired. In other caſes the patient becomes delirious, lies with the mouth open, ſnores, and is obliged to be ſupported in nearly an erect poſture to prevent ſuffocation. There is frequently, redneſs, ſwelling, pain, and pulſation in the external fauces, neck, and even breaſt; hence, he continues, the jugular veins, with thoſe of the forehead and under the tongue become diſtended with varices.*

The cynanche tonſillaris, may terminate in reſolution, ſuppuration, gangrene, or ſchirrus. The two former are common, the two latter very rare.†

Reſolution is at all times a favourable termination, and, in

* Aph. Boerh.

† It sometimes leaves a permanent hard swelling of the tonsils, which does not deserve the name of sehirrus, and is attended with no inconvenience but from its bulk. This affection of the tonsils more frequently comes on without inflammation, and sometimes goes so far as to render it necessary to remove one or both, which is done by throwing a ligature around the base.

the prefent cafe, fuppuration, although troublefome, is feldom attended with danger. If indeed the fuppuration of the fauces is very general, even although the trachea is not affected, the matter may be fuddenly poured into it, and induce fuffocation, which, Van Swieten and others affert, fometimes happens; it is fo rare an accident, however, that it is hardly to be feared.

When fuppuration takes place, the febrile fymptoms abate, generally with fome degree of fhivering, the throat becomes paler and lefs painful, and fometimes a fenfe of pulfation is felt, or if it has been prefent at an earlier period, becomes more fenfible. We know that the abfcefs is ripe by a fmall white foft tumor appearing about the centre of the inflamed part.

The quantity of pus difcharged from fuch abfceffes is often very confiderable, and of an intolerable tafte and fmell.

The abfcefs fometimes points at a more concealed part; the furgeon muft then feel for it with the finger, when there is reafon to believe it formed. There is always reafon to fufpect the prefence of an abfcefs, when the patient, after the febrile fpmptoms have abated, experiences a confiderable difficulty of fwallowing, although the inflammation is evidently diminifhed, is reftlefs and complains of a general pain in the mouth, with flight and irregular fhiverings. The pulfe, Tiffot obferves, is then foft, without being natural, there is a fenfe of weight in the tongue, fmall white fpots often appear on the gums and infide of the cheeks, and the patient complains of a difagreeable tafte and fmell.

"Cynanche tonfillaris," Dr. Cullen remarks, "hardly "ever terminates by gangrene, although, in this difeafe, fome "floughy fpots commonly fuppofed to be the forerunners of "gangrene, fometimes appear upon the fauces." By other writers, however, who feem to have met with the difeafe in

a more violent form, gangrene is regarded as rather a more frequent occurrence.* It is almoſt always fatal.

Like ſuppuration, the gangrene is ſometimes ſituated in parts which cannot be brought into view. From the courſe of the diſeaſe, however, and the ſtate of the ſymptoms in general, we may always readily determine its preſence.

Upon the whole, when both the local and general ſymptoms have been unuſually violent, and the means employed have failed to procure any conſiderable remiſſion; when the pain and inflamed appearance of the fauces are ſuddenly diminiſhed, the deglutition rendered eaſier, the pulſe from being ſtrong becomes ſmall, weak, and irregular, the face aſſumes a cadaverous appearance, the extremities become cold, with clammy ſweats, and the breath fetid, although we cannot perceive the gangrene, we may be aſſured that it has taken place.

The termination in ſchirrus † is ſtill more rare. Tiſſot obſerves that he has ſeen the cynanche tonſillaris terminate in mortification or ſchirrus when treated with heating medicines, in order to force out ſweats, but that if properly treated, it never terminates in either of theſe ways.

Like other febrile diſeaſes, it is ſometimes relieved by a critical diſcharge, a flow of ſweat, or a diarrhœa. The increaſed flow of ſaliva is ſometimes ſo great, and attended with ſuch relief, as to deſerve the name of critical. The diſeaſe generally comes to its height on the fifth or ſixth day.‡

2. Of the Cauſes of Cynanche Tonſillaris.

Like moſt of the other phlegmaſiæ, the cynanche tonſilla-

* See the observations of Van Swieten and others.

† Mead's Mon. et Præc. Med. cum Notis Wintringhami, vol. i. Quarin de Feb. Aph. Boerhaav. cum Com. Van Swiet. de Angina.

‡ Dr. Sims on Epidemic Diseases.

ris is moſt apt to attack the young, robuſt, and plethoric, eſpecially thoſe of a ſanguine temperament. It is a remark of Sydenham, that thoſe who have red hair are moſt liable to it. Quarin thinks that men are more ſubject to it than women.

It is moſt frequent in ſpring and autumn. In ſummer it rarely appears; it ſometimes appears periodically in the former ſeaſons.

In its exciting cauſes alſo, the cynanche tonſillaris agrees with the other phlegmaſiæ. Cold, particularly if alternated with a high temperature or partially applied, eſpecially if applied to the ſeat of the diſeaſe, is ſtill the chief exciting cauſe. Sudden viciſſitudes of temperature, riding againſt a cold wind, much ſinging or vociferation, the blowing of wind inſtruments, acrid aliments, medicines, or poiſons, the ſuppreſſion of accuſtomed evacuations, and a peculiar ſtate of the atmoſphere, are enumerated by Quarin * as the chief exciting cauſes of cynanche tonſillaris.

With reſpect to the laſt, of which much has been ſaid, if we except cold, damp, and variable weather, there does not appear to be any peculiar ſtate of the atmoſphere which tends to produce this diſeaſe.

Cynanche tonſillaris is uſually a mild diſeaſe. It is in the highly-prediſpoſed that it aſſumes its more alarming forms.

3. Of the Treatment of Cynanche Tonſillaris.

There is a ſtriking reſemblance between the treatment of the inflammatory ſore-throat and ophthalmia; the chief differences ariſing from the nature of the part affected, and from the former being more frequently a febrile diſeaſe.

In the milder caſes of cynanche tonſillaris we truſt chiefly to local means. They are either internal, or external.

* De Febribus.

In the mildeſt caſes the former only are neceſſary. They conſiſt chiefly of mixtures for waſhing the inflamed parts, the compoſition as well as the effects of which are analogous to thoſe of collyria in inflammation of the eyes. They may be divided into four claſſes, according to the different objects we have in view in employing them. 1. Thoſe employed for the purpoſe of procuring reſolution. 2. Thoſe proper when ſuppuration is unavoidable. 3. Thoſe employed when the abſceſs has burſt ſponſtaneouſly or been laid open; and, 4. Thoſe which are neceſſary when a tendency to gangrene has ſupervened.

The purpoſes for which they are employed point out what their compoſition ought to be. In the uſe of the firſt claſs our objects are, by their ſtimulus, to diminiſh the inflammation; by their mucilaginous property, to defend the parts when the ſaliva is thin and acrid; and by their detergent quality, to cleanſe them, when clogged with thick viſcid mucus.

The firſt purpoſe may be anſwered by the vegetable and mineral acids, vinegar, the juice of acidulous fruits, the ſulphuric and muriatic acids properly diluted, &c. by ſome of the nutral ſalts, particularly borate of ſoda, nitrate of potaſh and muriate of ammonia, alkohol in various forms, and many of the gums, particularly myrrh, capſicum, an infuſion of which is an excellent vehicle for other ingredients, horſe-raddiſh, muſtard, &c. Various aſtringents, particularly alum and Peruvian and oak bark. The gargle may be made more or leſs ſtimulating according to its effects, and the degree of the inflammation.

When mucilaginous gargles are indicated we may add gum arabic, or the white of egg, or uſe a decoction of ſome of the mucilaginous herbs.

When the fauces are clogged with thick mucus, a mixture of honey and the muriatic acid may be applied with a

pencil. Sydenham recommends the ſulphuric acid. A principal part of their effects ſeems to ariſe from their increaſing the flow of ſaliva, by which the mucus is diluted and waſhed off.

But if the diſeaſe has continued for a conſiderable time with little remiſſion, eſpecially if the pain abates while the ſwelling ſtill continues or increaſes, we have little hopes of procuring reſolution. Our view is then to induce a ſpeedy and favourable ſuppuration, and for this purpoſe gargles of a different kind are proper.

They ſhould conſiſt entirely of warm emollient fluids, and be uſed in large quantity. "Sed hoc primo elapſo tempore, "emollientia et demulcentia prœſcribi ſolent, e lacte nimi-"rum, radicibus althœæ, floribus malvæ, ſeminibus lini, "caricis pinguibus, gummi arabico,"* &c.

In ſhort, here, as in the former caſes, the compoſition of the gargle is readily determined by reflecting on the end we have in view. It is no longer our wiſh to diminiſh the inflammation, we therefore avoid thoſe applications which tend to reduce it, the gargle ought therefore to be mild. We wiſh to promote ſuppuration; nothing for this purpoſe is more powerful than warmth, the gargle ſhould therefore be uſed warm, and in large quantity, that its temperature may not be ſuddenly reduced.

The beſt way of uſing this gargle is from time to time to permit as large a quantity as can conveniently be retained to lie on the part, till its temperature falls to that of the mouth.

After the abſceſs has burſt, our view is to diſpoſe the parts to heal, emollient and gently aſtringent gargles are the beſt for this purpoſe.

* Lieutaud's Synopsis Prax. Med.

If a tendency to gangrene appear, the gargles may be compoſed of infuſion of bark and capſicum with port wine or diluted ſpirits. If the parts lie within reach, they ſhould be ſcarified and touched with more ſtimulating applications. But the local means employed in ſuch caſes we ſhall preſently have occaſion to conſider more fully. They are the ſame as in cynanche maligna. As gangrene in cynanche tonſillaris, however, is the conſequence of increaſed excitement, we muſt, eſpecially on its firſt appearance, be cautious in the uſe of means which tend to increaſe the inflammation, leſt we rather increaſe than diminiſh the tendency to gangrene.

There has been ſome difference of opinion reſpecting the beſt way of applying medicine to the internal fauces. Gargling waſhes them beſt; but the motion ſeems often to increaſe the inflammation, ſo that many diſſuade from it in the ſeverer caſes. The medicine ſhould then be thrown into the fauces by means of a ſyringe, or applied by a pencil; or, as Sydenham recommends, merely kept in the mouth for ſometime and then allowed to run out. In this way, however, it is only applied to the anterior parts.

When the deep-ſeated parts are affected, ſwallowing is the only means of making any application to the inflamed part, and it unfortunately happens, we have ſeen, that in theſe caſes ſwallowing is moſt difficult and painful, and moſt frequently interrupted. When the pain occaſioned by ſwallowing is very great, it more than counterbalances any advantage to be expected from this claſs of medicines.

Some practitioners affirm that gargles and other waſhes for the throat ſhould be uſed cold, while others maintain that they ſhould always be of the ſame temperature with the body. When the inflammation is ſlight, it is of little conſequence whether they be cold or tepid; We have reaſon to believe,

that when it is more ſevere, they ſhould be of the ſame temperature with the body. If we are endeavouring to promote ſuppuration, their temperature, we have juſt ſeen, ſhould be higher.

Applications to the internal fauces are ſometimes made in the form of vapour. The vapour of warm water employed at an early period tends to procure reſolution; at a later period to induce a favourable ſuppuration. In the former caſe vinegar, diſtilled ſpirits, &c. may be added to the water. The vapour may be drawn in through the ſpout of a tea-kettle, or more effectually by the inſtrument termed an inhaler. We have reaſon to believe that little advantage is derived from impregnating the vapour with flores ſambuci, and other herbs recommended by Eller, Lieutaud, and other foreign writers.

There is ſome difference of opinion reſpecting the employment of ſialogogues. The advantage often derived from ſpontaneous ſalivation has induced ſome to recommend them, but the irritation they occaſion ſeems generally to counteract any benefit to be expected from the increaſed flow of ſaliva. Phyſicians therefore ſeldom employ mere ſialogogues in cynanche tonſillaris, but if the means which prove otherwiſe ſerviceable excite a flow of ſaliva, it adds to their good effects.

According to the mode of arrangement I follow, local blood-letting, when performed from the internal fauces, ſhould be conſidered here. It will be better, however, to throw into one place the few remarks to be made on this remedy.

When the inflammation is conſiderable, the foregoing muſt be aided by external means. The ſimpleſt are warm applications and rubefacients. With reſpect to the compoſition of the rubefacients; muſtard is too harſh an application here.

Sir John Pringle advifes a piece of flannel to be applied to the neck, moiftened with oil and a folution of the carbonate of ammonia, in the proportion which the patient can eafily bear; by which he remarks, a fweat is brought out on the part, and fometimes over the whole body. This application is more effectual than bags of hot falt or fand recommended by fome, and more agreeable than the dung of animals which has actually been employed for the fame purpofe.* A plaifter compofed of the liniment. fapon. and muriate of ammonia, in which the ammonia, being gradually evolved, acts as a powerful rubefacient, is perhaps the beft application of this kind.

If the general excitement be confiderable, it is proper to delay the ufe of rubefacients till it has been reduced by proper evacuations. The fame may be faid of the employment of blifters, which are a more powerful remedy in this difeafe. They fhould be pretty large, and applied near the feat of the difeafe. Although blifters do not at firft bring relief, we are not to defpair of their proving ufeful, for when the firft fails, a fecond often fucceeds, or when the difcharge excited at firft brings no relief, the continued difcharge kept up by the ung. cantharid. frequently fucceeds better.

But no local remedy is fo generally beneficial in fuch cafes as local blood-letting. Scarifying the parts affected as far as they can be reached is often recommended. This is particularly ferviceable when the fwelling is great. The ranular veins are fometimes opened, but this, as Dr. Cullen obferves, is an infignificant remedy, and as it is at the fame time a troublefome one, it is feldom put in practice.

Scarification and cupping on the neck is more effectual. When the neck is much fwelled and inflamed, Tiffot obferves,

* Dr. Sims on Epid. Dis.

one or two cuts made pretty deep have often ſaved the patient's life; leeches, however, are here the moſt convenient means.

When a tendency to ſuppuration has taken place, emollient poultices are uſeful.

Certain operations form part of the local means employed in the cynanche tonſillaris. Theſe belong to the province of the ſurgeon. I have already had occaſion to mention laying open the abſceſs, which leſſens the duration of the diſeaſe.

Bronchotomy is a more ſerious operation, and fortunately leſs frequently neceſſary. When the ſwelling threatens ſuffocation, however, it ought not to be delayed. Many have laid it down as a rule never to perform this operation, when, from a weak and intermitting pulſe, and other ſymptoms of extreme debility, the patient's death appears inevitable. This advice ſeems to proceed from too anxious a regard for the practitioner's reputation. It is to be recollected that in ſuch caſes the moſt alarming ſymptoms are often the conſequence of impeded reſpiration, and will diſappear when a free paſſage is given to the air. The reader will find Michaelis, in his Treatiſe de Angina Polypoſa, and others who were converſant with bronchotomy, ſpeaking of it as a comparatively trivial operation, always to be reſorted to where there is any riſk of ſuffocation.

When the general excitement is increaſed, every part of the antiphlogiſtic regimen is neceſſary; all kinds of animal food and fermented liquors muſt be avoided, and the diet ſhould be mild and diluent. The patient ſhould not, however, be forced to drink when the pain of deglutition is great, but copious clyſters ſhould be exhibited. In the one way or the other, dilution ſhould, in all the ſeverer forms of the diſeaſe, make a principal part of the treatment. "Interea

" larga manu] propinantur ſerum lactis aqua nitroſa aliaque " diluentia et demulcentia." *

When deglutition is wholly interrupted, the patient muſt be nouriſhed by farinaceous clyſters, till by the moſt active means the inflammation of the fauces is reduced.

The firſt evacuation affecting the whole ſyſtem, generally employed in inflammatory ſore-throat, is vomiting. Emetics given early, and they ſhould never be omitted where the ſymptomes are conſiderable, often put a ſtop to the diſeaſe, and ſeldom fail to bring conſiderable relief. Where there is much fever the effects of emetics may be explained by their tendency to promote perſpiration; but it is remarkable, that even where there is no affection of the ſyſtem, they often, in a way it is not eaſy to explain, more effectually relieve the inflammation at an early period, than any local remedy we can employ. After the diſeaſe has laſted for ſome time, their exhibition requires more caution, and is always leſs effectual. If the inflammation runs very high, they may do harm. Tiſſot even aſſerts, that under ſuch circumſtances they may render the diſeaſe fatal. Where, however, the ſwelling is conſiderable, compared with the other ſymptoms, but not extreme, they are often ſerviceable, even at a late period. Lieutaud ſays he has ſeen patients labouring under inflammatory angina ſnatched from the jaws of death by an emetic.

Emetics indeed are ſometimes employed with advantage even after the formation of the abſceſs. When the abſceſs is ſituated in the deeper parts of the pharynx, or in the œſophagus, the ſurgeon cannot reach it, and the exhibition of an emetic, if it is ripe, will almoſt always occaſion its burſting. Not only vomiting, but even coughing or laughing, will ſometimes have this effect. †

* Lieutaud's Synopsis Prax. Med. † Tissot.

Vomiting is alſo proper towards the end of the diſeaſe, when a collection of irritating matter is accumulated in the ſtomach, in conſequence of the patient's having ſwallowed large quantities of acrid or viſcid ſaliva, which both load the ſtomach and vitiate its ſecretions.

From the general efficacy of cathartics in inflammatory affections of the head, and from the cynanche tonſillaris ſometimes terminating by a ſpontaneous diarrhœa, phyſicians were led to rely much on them. More than a free action of the bowels, however, is ſeldom beneficial. When the inflammation and general excitement are great, ſome degree of catharſis may be kept up with advantage. At an early period ſaline and mercurial carthartics are the beſt.

In the worſt caſes, where either the pain of ſwallowing is ſo great that the patient refuſes to take any thing by the mouth, or deglutition is abſolutely interrupted, we muſt have recourſe to the exhibition of copious cathartic clyſters.

When the excitement is great, veneſection ſhould never be neglected at an early period, and the blood, as in other inflammations of the head, ſhould be taken from the jugular vein, if it can be readily done, that the ſame operation may ſerve the purpoſe of both local and general blood-letting. When delirium or coma ſupervenes, the treatment, with the addition of local means to relieve the throat, muſt be the ſame as in phrenitis.

Diaphoretics are more ſerviceable in inflammatory ſore-throat than in moſt of the diſeaſes we have been conſidering. It is often terminated, we have ſeen, by ſpontaneous ſweating. A ſweat forced out by external warmth and heating medicines, however, is rarely ſerviceable, and generally does harm. If diluting fluids, with the ammonia acetata, or any other mild diaphoretic, induce a ſweat, it often brings relief.

When a tendency to gangrene appears, we muſt have recourſe to the bark and wine, with caution, however, leſt by exhibiting them too early we rather increaſe than diminiſh this tendency. *

There is a material difference in the treatment as well as prognoſis of gangrene ſupervening on the cynanche tonſillaris, and the cynanche maligna. In the latter, it ariſes directly from debility; the moſt invigorating plan is proper, and often ſucceſsful. In the former, it is the conſequence of exceſſive general excitement; till this is ſufficiently diminiſhed, the invigorating plan will do harm, and then it is often too late for any plan to be of ſervice.

When deglutition is interrupted, the bark and wine muſt be exhibited per anum.

Such are the various means employed in the inflammatory ſore-throat. It is to be remembered that the practice ſhould be the more vigorous, the more the inflammation extends towards the œſophagus, and moſt ſo when it has its ſeat there. "Funeſtiſſima eſt angina, quæ nec in faucibus nec in cervice quidquam conſpicuum exhibit." †

As metaſtaſis ſometimes happens in the cynanche tonſillaris, moſt frequently to the lungs, we muſt be prepared for this accident, and watch the tendency to it.

The deglutition in this diſeaſe is now and then interrupted by ſpaſm of the œſophagus which ſometimes appears as an idiopathic diſeaſe. Various remedies have been recommended in it, few of which, however, are of much ſervice. As in the caſe before us it ariſes from the irritation of the primary diſeaſe, antiphlogiſtic meaſures are chiefly to be

* See what was said on this snbject in speaking of the treatment of the Phlegmasiæ in general.

† Quarin De Febribus.

relied upon. Emollient and oily applications uſed externally, and internally if any power of deglutition ſtill remains, and the medicines which have been termed antiſpaſmodic, particularly opium, are occaſionally uſeful. Van Swieten* recommends a ſoap compoſed of oil of turpentine, vegetable alkali. and muriate and acitate of ammonia, to be applied externally, and alſo uſed internally if it can be ſwallowed. But the relief obtained by oily and emollient medicines is ſeldom permanent. †

Dr. Johnſtone thinks that opium and extract of cicuta promiſe moſt in this caſe. When any power of deglutition remained, he deſired the medicine to be ſwallowed; in other caſes the opium and cicuta were made into pills which the patient was deſired to hold in the mouth. The exhibition of mercury has been carried to ſalivation without bringing relief. ‡ Mechanical force has been employed. This, however, is always attended with danger, and has even proved fatal, as in a caſe mentioned by Dr. Johnſtone.

A ſchirrous affection of the œſophagus or permanent enlargement and induration of the lymphatic glands of the neck ſometimes, though rarely, ſucceed cynanche tonſillaris. They more frequently ariſe from other cauſes. When there is reaſon to believe that deglutition is prevented by a ſchirrus of the œſophagus, bougies of a proper ſize may be uſed, and we have been adviſed to let ſmall doſes of hydrarg. ſubmuriat. and ci-

* Com. in Aph. Boer. Aph. 797.

† See a paper by Dr. Johnstone, in the 2nd vol. of the Memoirs of the Med. Soc. of London.

‡ Dr. Johnstone succeeded in one case by means of corrosive sublimate and the bark, but thinks they do not promise to be generally successful.

cuta remain in the mouth, that they may be gradually ſwallowed. I have ſeen ſeveral caſes of this kind, but none in which this or any other mode of treatment proved ſucceſsful.

If the dyſphagia ariſes from a ſwelling of the lymphatic glands, the means employed in ſcrophula are ſometimes ſerviceable.

When the inflammatory ſore-throat has been ſevere, it is often ſucceeded by a conſiderable degree of debility. Nouriſhing food and the moderate uſe of wine are generally ſufficient to reſtore the ſtrengh. Dr. M'Bride and others recommend the bark and iron, which may be uſed, if the tendency to the diſeaſe has wholly ſubſided.

Frequent attacks leave the fauces in a ſtate of relaxation which is favourable to the return of the diſeaſe; by the uſe of aſtringent gargles the parts are ſtrengthened. The recurrence of the diſeaſe, however, can only be prevented by carefully avoiding its exciting cauſes, and by temperance and exerciſe, which correct the tendency to plethora.

SECT. II.

Of the Cynanche Maligna.

THIS form of cynanche, as appears from the definition quoted from Dr. Cullen's ſynopſis, affects the tonſils and mucous membrane of the fauces with tumor, redneſs, and mucous cruſts of a whitiſh or aſh colour gradually ſpreading and covering ulcers. The fever which attends it, contrary to what happens in the other phlegmaſiæ, partakes more of the typhus

than ſynocha, and it is very frequently attended with an eruption on the ſkin of the ſame nature with that of the ſcarlatina.

Some doubt whether cynanche maligna and ſcarlatina ſhould be regarded as different diſeaſes. If by different diſeaſes we mean thoſe whoſe ſymptoms differ, they are ſurely very different; if by different diſeaſes we mean thoſe whoſe cauſes are different, and which never run into each other, they muſt be regarded as varieties of the ſame diſeaſe.

Others have not only regarded the ſcarlatina and cynanche maligna as different diſeaſes, but have looked on thoſe caſes in which they are combined, as of a nature different from either. This view of the ſubject is neither uſeful in practice nor accurate in a noſological point of view.

According to the moſt accurate view perhaps, the ſcarlatina ſimplex alone ſhould have been ranked among the exanthemata; and the pure cynanche maligna, namely, that unattended by an affection of the ſkin, alone conſidered as a diſtinct diſeaſe. It would then have been eaſy to deſcribe the appearances reſulting from the combination of the two diſeaſes, and the manner in which the treatment ſhould be adapted to different caſes, according as the ſymptoms of the one or other prevail. As the ſcarlatina and cynanche maligna ſtrictly ſo called appear unattended by each other, in a ſyſtem of noſology they ſhould be regarded as diſtinct diſeaſes; as they are ſo frequently combined, their combinations muſt be treated of in a ſyſtem of practice; and this arrangement would appear to be ſanctioned by the hiſtory of the diſeaſes, which on their firſt appearance were certainly more diſtinct than we find them at preſent.

1. Of the Symptoms of the Cynanche Maligna.

The ſymptoms of this diſeaſe are ſo complicated, that it is

difficult to give a view of them at the ſame time ſufficiently full and diſtinct.

We ſhall in the firſt place conſider the manner in which the diſeaſe makes its attack; then deſcribe the affection of the fauces; next the ſymptoms which attend it; then the various appearances of the eruption; and laſtly the different ways in which the diſeaſe terminates.

The attack of cynanche maligna often differs but little from that of ſimple fever. The patient complains of laſſitude, dejection of ſpirits, and giddineſs. He is generally affected with more or leſs ſhivering, frequently alternating with fits of heat. The pulſe is frequent, and the breathing more or leſs hurried.

Theſe ſymptoms ſeldom continue long before the patient complains of a ſenſe of ſtiffneſs about the neck, with ſome pain and difficulty of ſwallowing, and on inſpecting the fauces, they appear red and ſwelled. In many caſes the affection of the fauces is troubleſome from the beginning, and ſometimes it is the firſt ſymptom.

When the diſeaſe makes its attack in this way, the prognoſis is favourable; it is probable that the diſeaſe will partake conſiderably of the nature of ſcarlatina.

But when along with the foregoing ſymptoms the patient complains of ſevere head-ach, eſpecially a pain in the crown of the head, violent pains of the back and limbs, or pain in the ſtomach, with nauſea and vomiting or with diarrhœa;* when inſtead of giddineſs, he is affected with coma or deli-

* The diarrhœa is often bilious. Both the vomiting and diarrhœa are most frequent in children. Although nausea and vomiting are among the worst symptoms of this disease, they do not always appear even in fatal cases. Mr. Colden says they rarely occurred in the epidemic he saw. See Mr. Colden's letter to Dr. Fothergill, in the first volume of the Medical Obs. and Inq.

rium; when the eyes are heavy and watry, the countenance either full and bloated, or pale, ſhrunk, and dejected; when he complains of an unuſual ſenſe of oppreſſion and debility; when the pulſe is ſmall, irregular, or tremulous, whether frequent or not,* or full, heavy, undoſe, and unequal, as Huxham † expreſſes it; when the breathing is ſmall, hurried, anxious, and interrupted with ſighing; when the urine is quite limpid, or very high-coloured and turbid; when the ſenſation in the fauces is rather that of an uneaſy ſtiffneſs than of pain, the deglutition being little impeded;‡ when the internal fauces appear of a dark red with brown ſpots, the tongue, eſpecially towards the root, being loaded with much viſcid white mucus; when an eruption of ſmall red puſtules or purpliſh blotches appear on the ſkin ſoon after the commencement, or at the very commencement, (for in the worſe caſes of cynanche maligna the eruption has been known to be among the firſt ſymptoms,) the prognoſis is bad.

It is not meant that all the foregoing ſymptoms ſhew themſelves at the commencement even of the worſt caſes. It is ſufficient, if ſeveral of theſe appear, to denote the malignity of the diſeaſe.

The very worſt caſes of cynanche maligna, however, ſometimes make their attack in ſo deceitful a way, that for ſome time, the ſymptoms differ little or not at all from thoſe of the moſt favourable caſes, ſo that although the one ſet of ſymptoms always affords an unfavourable, the other does not uni-

* Quarin (De Febribus) obſerves, that the pulſe is ſometimes leſs frequent than natural at the commencement of cynanche maligna.

† On the Malignant Ulcerous Sore-throat.

‡ The pain and difficulty of ſwallowing, Dr. Wall obſerves, is ſometimes ſo trifling, that the diſeaſe often makes great progreſs without the patient knowing that there is any diſorder in the throat. He relates a caſe in which this happened.

formly afford a favourable prognoſis. In ſome caſes the ſymptoms remain very mild for ſeveral days. The ſtrength in particular is often not much impaired at an early period, nor always indeed at a later period. Even in the worſt caſes, Mr. Colden obſerves, many walked about till within an hour or two of their death.*

It has ſometimes happened, as in an epidemic deſcribed by Mr. Stephen,† that the temperature of the body was hardly greater than natural, not only at the commencement, but throughout the whole diſeaſe.

The abſence of all the ſymptoms of fever indeed at an early period, does not always aſſure us that the caſe is free from danger. Mr. Collins ‡ remarks, that in the malignant ſore-throat epidemic in St. Vincent, the fever did not uſually appear till the affection of the throat had laſted ſeven or eight days, and the patient generally walked about, notwithſtanding a very bad ſtate of the throat, till the fever came on. It is even aſſerted by ſome that the cynanche maligna has appeared without being accompanied by fever at any period.§ Such varieties, however, are very rare.

On the ſtate of the throat depends the prognoſis at every period of the diſeaſe. At firſt, we have ſeen, the patient complains of a ſtiffneſs of the muſcles of the neck, and ſome difficulty in ſwallowing.‖ As the affection of the fauces in-

* Med. Obs. and Inq. vol. i.

† Med. Comment. vol. xii.

‡ Med. Comment. vol. ii.

§ Mr. Short, in his Chronological History of the Weather, obſerves, that this was the case in the malignant sore-throat which raged in England in 1742.

‖ As in the cynanche tonsillaris, the œsophagus is sometimes but rarely affected with spasm, rendering the deglutition very difficult or wholly interrupting it.

creaſes, it is often attended with a degree of hoarſeneſs, which, like the difficulty of deglutition however, is ſeldom conſiderable.

If the breathing be much affected, it proceeds from the inflammation ſpreading to the trachea.

However florid and free from ſpecks the fauces may appear at the commencement of cynanche maligna, they ſoon aſſume a dark red colour, and ſpecks of ſome ſhade between a light aſh colour and a dark brown appear ſcattered over the tonſils, velum pendulum palati, and uvula. The lighter the colour of the ſpecks, the better is the prognoſis. The formation of theſe ſpecks, it has been obſerved, is ſometimes preceded by inequality and increaſed frequency of the pulſe, and by an increaſe of the reſtleſſneſs and depreſſion.*

The firſt appearance of the internal fauces, is ſometimes that of a large whitiſh coloured ſtain ſurrounded with a florid margin, the ſtain ſoon becoming a large ſlough.

The ſwelling is ſometimes conſiderable, but ſeldom ſo much ſo as in the cynanche tonſillaris. In the appearance of the throat indeed, as well as the other ſymptoms, the cynanche maligna, frequently at an early period ſo nearly reſembles this diſeaſe, that they can only be diſtinguiſhed by the cauſes from which they ariſe, and the nature of the prevailing epidemic.†

As the ſpecks ſpread, they generally become of a darker colour, the interſtices at the ſame time aſſuming a purple hue, new ſpecks appear, and the whole internal fauces are at length covered with thick ſloughs, which frequently fall off, diſcovering ulcers ſometimes deep-ſeated.

When the ſores left after the ſeparation of the ſloughs, ap-

* Dr. Willan on Cutaneous Diseases.

† See the diagnosis between these diseases, in the 211th page of Dr. Fothergill's works published by Dr. Lettsom.

pear of a fiery red, the danger is very great. If they become covered with a black cruſt, the event is generally fatal. When, on the other hand, the parts which the ſloughs covered appear florid and clean, the prognoſis is more favourable.

As the diſeaſe advances, the breath becomes fetid and is often diſagreeable to the patient himſelf. He generally ſpits up mucus tinged with blood, and often a matter of a livid ſanious appearance, which ſometimes excoriates every part it touches. The lips are frequently of a livid or black colour, and on their inner ſides, covered with ſmall veſicles containing an ichorous matter. The ſudden ſuppreſſion of the diſcharge from the throat has been obſerved, eſpecially in children, to be followed by a fatal train of ſymptoms.

In the worſt caſes, the fauces at length appear quite black, and pieces of mortified ſkin and fleſh are ſpit out. It is needleſs to ſay that this ſymptom affords a very unfavourable prognoſis; it is not always fatal, however, as I have myſelf witneſſed.

When the diſeaſe takes a favourable turn, the parts ſurrounding the ſloughs begin to aſſume a more florid appearance, and a better conditioned matter is diſcharged from the ulcers.

While the affection of the fauces increaſes, the various ſymptoms of general derangement keep pace with it. If delirium or coma has not come on at an early period, it generally appears in the progreſs of the diſeaſe. The eyes become more fixed, dull, and heavy; the delirium for the moſt part being of that kind which attends typhus. Dr. Fothergill has obſerved, that the delirium in cynanche maligna is of a peculiar kind; an obſervation which has not been confirmed by the experience of others.

In ſome caſes it is of the phrenitic kind. There is then reaſon to believe that the inflammation has ſpread to the

brain; generally a fatal accident. The countenance is then flushed and assumes an expression of fierceness. In the generality of cases it is either swelled and bloated, (sometimes so much swelled as to close the eyes,* or shrunk and cadaverous. Early in the disease, it has a strong expression of anxiety, which wears off as the debility increases. At a more advanced period the eyes are generally affected with a languid inflammation, and in the worst cases often suffused with blood.

All hemorrhagies, except very early in the disease, are unfavourable in the exquisitely formed cynanche maligna. Though some, as in fever, indicate more danger than others. The observations made respecting them in typhus are applicable here.

Petechiæ do not so frequently attend cynanche maligna, as the other symptoms would lead us to expect. In some epidemics they are more frequent than in others: Dr. Wall and a few other writers speak of them as not an unusual symptom. In an epidemic mentioned by Mr. Short, they seem to have been almost a constant symptom.

As the disease advances, the pulse becomes more depressed. On touching the skin, which is generally parched, the same sensation of heat is experienced as in malignant typhus. There is often an exacerbation in the evening, during which the breathing is sometimes rattling or even sterterous.

The diarrhœa increases in the progress of the disease, or supervenes if it did not appear at the commencement, the patient complains of griping pains, and the matter discharged often excoriates the anus and neighbouring parts. When the fæces become black, the prognosis is very bad.

The supervening or increase of the diarrhœa seems often

* Mr. Russell's Œconomy of Nature in Acute and Chronic Diseases.

to proceed from the acrid matter of the fauces getting into the ſtomach and inteſtines, or from the ſloughy affection ſpreading to theſe parts, for in ſome caſes it has been traced along the whole courſe of the alimentary canal,* and conſiderable hemorrhagies often ſucceed the abraſion of the ſloughs in the inteſtines.

It was obſerved above, that the inflammation in ſome caſes ſpreads to the larynx and trachea. The ſame is true of the ulcers; they have been traced by diſſection even beyond the diviſion of the trachea. When the diſeaſe attacks the wind-pipe, a very troubleſome ſet of ſymptoms come on; the voice is altered, aſſuming a wheezing or ringing ſound, ſometimes it is loſt; the breathing becomes difficult; the patient is teaſed with a ſevere cough, endeavouring to bring up the acrid matter ſecreted by the ulcers, which reſembles that ſpit out from the fauces; it is ſometimes mixed with tubiform ſubſtances, once ſuppoſed to be portions of the internal membrane of the trachea and bronchiæ, but now known from diſſection to be a matter formed by the diſeaſe, which lines theſe canals, and which we ſhall have occaſion to conſider more particularly in treating of the cynanche trachealis. In ſuch caſes the patient is ſometimes ſuddenly carried off by ſuffocation. The tendency of the cynanche maligna to affect the trachea has induced Dr. Johnſtone to propoſe dividing the diſeaſe into the cynanche maligna tonſillaris, and trachealis.

In the more ſevere caſes indeed, almoſt every part in the neighbourhood partakes of the ſtate of the fauces; the membrane lining the noſtrils is generally much affected, often

* Mr. Russel's Treatise just referred to, Huxham on the Ulcerous Sore throat, &c.

occaſioning fits of ſneezing, an acrid matter mixed with blood frequently runs from it, excoriating the lips; ſometimes even bliſters are raiſed on the hands and arms of children, when they uſe them for wiping away the diſcharge. However unfavourable this diſcharge, its ſudden interruption is ſtill more ſo.* It is ſeldom ſo conſiderable in adults as in children.

The inflammation, as in the cynanche tonſillaris, ſometimes ſpreads to the tongue, ſometimes along the euſtachian tube to the internal ear, occaſioning ulceration, and ſometimes wholly deſtroying its ſtructure.

Sometimes it ſpreads to the parotid, maxillary, and other glands in the neighbourhood of the fauces, which become ſwelled and painful. Huxham ſays that he has ſeen this happen at the very commencement of the diſeaſe to ſuch a degree as to threaten ſuffocation. They ſometimes ſuppurate and form tedious and painful abſceſſes.

The whole neck indeed ſometimes ſwells, becomes tender to the touch, and aſſumes a dark red colour, and the head is retracted. Even the arms, hands, aud fingers, in ſome caſes are inflamed, ſwelled, ſtiff, and painful.

When the trachea is much affected, particularly if the diſeaſe ſpread beyond its diviſion into the bronchiæ, inflammation of the lungs often comes on and proves fatal. This indeed ſometimes happens in cynanche maligna, without being preceded by any affection of the trachea, and has even ſuddenly deſtroyed the patient, where there had been no ſymptom of alarm, as Mr. Colden aſcertained by diſſection. Mr. Collins obſerves, that the cynanche maligna ſometimes proved fatal after the affection of the fauces had wholly diſap-

* See the Observations of Huxham and others.

peared, the inflammation having ſpread to the ſtomach or lungs. Hiccup, which, particularly at the height of the diſeaſe, has been obſerved to be a very unfavourable ſymptom, ſeems often to ariſe from the inflammation ſpreading to the œſophagus and ſtomach.

Mr. Colden makes the following curious remark; that ſome had ſores, like thoſe in the throat, behind the ears, on the genitals, or other parts of the body, and in theſe caſes there was ſometimes no ulceration nor even affection of the throat. Others make ſimilar obſervations.

The cynanche maligna generally arrives at its height about the fifth or ſixth day, and in caſes which terminate favourably declines in five or ſix days more. It has been obſerved, that it runs its courſe more ſlowly in adults than in children.

Such are the ſymptoms attendant on the worſt ſtate of the fauces in the cynanche maligna. When the diſeaſe takes a favourable turn, the ſymptoms which have juſt been enumerated are either abſent or conſiderably modified. The countenance begins to loſe that peculiar expreſſion, ſo characteriſtic of the worſt forms of the diſeaſe. The pulſe becomes ſtronger and leſs frequent. The reſpiration freer. The ſkin from being parched becomes ſoft and often moiſt, one of the moſt favourable ſymptoms, the evening exacerbations, leſs remarkable, and the diſcharge from the inteſtines and nares, if it ſtill continues, leſs acrid.

But whether the diſeaſe proves favourable or otherwiſe, a ſet of ſymptoms which ſtill remain to be conſidered, generally attends it.

The connection between the cynanche maligna and ſcarlatina, I have already had oceaſion to notice. It ſometimes happens, we have ſeen, that the former, ſuch as it has juſt been deſcribed, appears without any affection of the ſkin, in

the ſame manner as we ſometimes meet with the ſcarlatina without any affection of the throat; in general, however, both affections are combined, and ſeem wonderfully influenced by the ſtate of each other. But while the abſence of the ſore-throat in the ſcarlatina always affords a favourable prognoſis, that of the eruption in the cynanche maligna generally affords an unfavourable one.

In ſome epidemics, the generality of caſes have appeared without any affection of the ſkin. Lieutaud even ſpeaks of the eruption as a rare occurrence in cynanche maligna. "Ut "ſileamus de efflureſcentiis cutaneis aliiſque variis ſymptoma-"tibus."* Dr. Wall alſo obſerves of an epidemic cynanche maligna, that very few had the ſcarlet eruption. There are inſtances of epidemics indeed, as that deſcribed by Dr. Collins, in which the eruption did not appear in a ſingle inſtance.

The period at which the eruption ſhews itſelf is various; it is rarely later than the fourth day, and ſeldom ſo early as the firſt. The early appearance of the eruption is unfavourable. It generally firſt ſhews itſelf about the neck and breaſt, ſometimes with itching of the ſkin, more frequently without this ſymptom; † and, as in the ſcarlet fever, the eruption ſpreads to the mouth and throat; the inner ſurfaces of the noſtrils and eyelids, alſo partake of it, and it ſometimes even extends to the tunica albuginea. ‡

The eruption, often attended with ſome degree of ſwelling, gradually ſpreads over the trunk and extremities. As in the ſcarlatina, it comes out in ſtains which, when nearly in-

* Synopsis Prax. Med.

† In some cases, Huxham observes, there is itching and desquamation without any eruption.

‡ Dr. Willan on Cutaneous Diseases.

ſpected, appear compoſed of ſmall prominent puſtules, with the interſtices, Dr. Willan obſerves, of the natural colour. Their prominence may be diſtinguiſhed by the eye, more eaſily, by the touch.

There are ſometimes puſtules of a larger ſize, particularly on the extremities, which are readily ſeen, being of a more intenſe red than the parts which ſurround them.

The appearances of the eruption affording a favourable prognoſis, are the ſame as in the ſcarlatina, a florid colour, uniform diffuſion, and a copious deſquamation.

The eruption being full, however, by no means inſures the mildneſs of the diſeaſe, nor does an unſteady and partial eruption univerſally indicate that the diſeaſe will be ſevere. Huxham ſays, he has ſeen ſome in this diſeaſe die of a phrenſy who were covered with "the moſt fiery raſh" he ever ſaw.

It rarely happens, however, that the eruption is uniformly diffuſed in ſevere caſes of cynanche maligna; it generally comes out in blotches, or ſmall points ſcattered over the trunk and extremities, which are ſeldom of a florid red, but of a dark purpliſh or livid hue, and which terminate in but a very ſcanty deſquamation.

When the eruption is favourable, a remiſſion often takes place on its appearance, and almoſt always at the period of deſquamation. When it is unfavourable, its appearance never, and its termination rarely, brings relief.

The duration of the eruption, like that of the diſeaſe, previous to its appearance, is ſeldom leſs than one day, and ſeldom more than four. In ſome caſes its duration on the whole is longer, from its diſappearing and returning again, which is far from being favourable. Dr. Willan obſerves that it is generally more florid in the evening than in the morning.

As in other eruptive fevers, the eruption has ſometimes ſud-

denly receded, an alarming train of ſymptoms ſupervening.* The patient falls into dropſical ſwellings, the countenance aſſumes a cadaverous appearance, and he is frequently carried off by convulſions. A ſimilar train of ſymptoms has ſupervened on the eruption ſuddenly aſſuming a livid appearance, or becoming pale from being very high coloured. All theſe ſymptoms it is evident are the effects of debility, farther illuſtrating what was ſaid of the retroceſſion of eruptions.

The deſquamation often continues a long time after every other ſymptom has diſappeared. It is not uncommon to ſee patients peeling the cuticle from their fingers, after they have been well for a fortnight or three weeks.

In the caſes which terminate favourably, the ſymptoms ſometimes gradually abate without the appearance of any which can be regarded as critical; in moſt favourable caſes, however, a gentle ſweat appears about the time of deſquamation. This criſis has been obſerved to be leſs perfect in adults than in children. The ſweat ſometimes appears earlier; it then generally brings relief, but ſeldom wholly removes the fever.† A moiſture on the ſkin in the mornings, however, which does not bring relief, ſeems merely the conſequence of debility, and indicates danger. The cynanche maligna, like moſt other febrile diſeaſes, often abates with a copious ſediment in the urine.

The other ſymptoms occaſionally critical in continued fever, ſeldom prove ſo in this diſeaſe.

* Mr. Russell and others on the Cynanche Maligna.

† "General sweats," Huxham remarks, "on the third, fourth, or "fifth day, or later, were salutary." Dr. Fothergill obſerves, that the morning sweats, when they occurred early in the disease, often brought such relief that the disease assumed the intermitting form.

With regard to the unfavourable terminations, ſome I have already had occaſion to mention; the patient, we have ſeen, is ſometimes deſtroyed by the inflammation's ſpreading to the trachea, or lungs, or to the ſtomach, or brain; and more rarely by metaſtaſis of the inflammation to theſe parts.

A retroceſſion of the eruption, and ceaſing of the diſcharge from the fauces, have alſo been mentioned as ſometimes attending the fatal termination. The diſcharge from the fauces is moſt apt to be diminiſhed during ſleep.

Some die of profuſe hemorrhagy from the inteſtines, noſe, mouth, or ears. The menſtrual diſcharge frequently appears before the uſual period in the cynanche maligna, and ſometimes becomes profuſe. Many in this diſeaſe have had it for the firſt time. If copious, or before the proper period, it is generally an unfavourable ſymptom; if very profuſe, it may prove fatal.

Some die ſuddenly by ſuffocation, in conſequence of the ſwelling of the glands of the neck.

In other caſes the patient is gradually reduced by an acrid catharſis.

When the trachea and its branches have been much affected, ulcerations are ſometimes formed in the lungs, and hectic fever comes on. I ſhall not here enter into the queſtion whether the cynanche maligna gives riſe to phthiſis, except where tubercles have previouſly exiſted, it is certain that it has occaſioned phthiſis where no tendency to this diſeaſe had previouſly appeared.

In many caſes, the fatal, like the favourable termination, is unattended by any peculiar ſymptoms. The worſt of the ſymptoms which have been enumerated gradually ſupervene; the fauces become black; the eruption aſſumes a dark purple colour, eſpecially about the throat; the breathing becomes difficult and ſonorous, and is frequently interrupted for ſome

ſeconds. A degree of ſtupor comes on, the eyes appearing gloſſy. Dark coloured and very offenſive fæces are paſſed involuntarily. Hiccup, in bad caſes one of the moſt fatal ſymptoms, ſupervenes, the extremities become cold, and are covered with a clammy ſweat; the pulſe intermits, at length cannot be felt, and the patient gradually expires, or is carried off by convulſions.

We eſtimate the danger more by the ſtate of the general than the local ſymptoms. Whatever be the appearance of the fauces, if the pulſe be pretty ſteady and the ſtrength not much exhauſted, we need not despair.

The prognoſis in cynanche maligna is beſt determined by obſerving how far the ſymptoms incline to thoſe of ſcarlatina. To place it in a clear point of view it will be uſeful, notwithſtanding it muſt occaſion ſome repetition, to contraſt the ſymptoms of the exquiſitely formed cynanche maligna with thoſe indicating a tendency to ſcarlatina.

In the ſcarlatina the firſt ſymptoms are thoſe common to fevers in general, particularly to the varieties of ſynocha.

If theſe be the only ſymptoms at the commencement of the cynanche maligna, they are generally more ſevere than in the ſcarlatina. In moſt caſes, however, the patient complains at the ſame time of acute pains in the back and limbs, he is troubled with nauſea and vomiting, or diarrhœa, or both. In the worſt caſes the pulſe from the firſt is weak and tremulous; the loſs of ſtrength for the moſt part, great and ſudden; the extreme anxiety which generally attends this diſeaſe is ſtrongly marked in the countenance; and even delirium or coma ſupervenes on the firſt night.

In the ſcarlatina the eyes are inflamed and prominent. In the cynanche maligna they are often more or leſs inflamed

alſo, but heavy, watry, and in the progreſs of the diſeaſe, fixed and gloſſy.

When the eruption is florid and uniformly diffuſed, there is generally from the beginning conſiderable pain of the throat increaſed on ſwallowing, the fauces are florid, and conſiderably ſwelled, and if ſpecks appear they are almoſt always of a light colour. In the true cynanche maligna the patient complains of little pain, but rather of an uneaſy ſtiffneſs about the neck; the fauces have a dark red or purple hue, and are covered wich cruſts of an aſh or brown colour. In this reſpect, however, there is much variety. In ſome caſes of cynanche maligna the fauces at the commencement appear of a florid red, and not unfrequently redder in ſome places than in others.

In the progreſs of the ſcarlatina the ſpecks are not readily changed into ulcers, and never ſpread ſo as to cover the whole or greater part of the fauces, nor erode the ſubjacent parts; thoſe parts which are not occupied by them remain of a florid colour, and if there is an unuſual ſecretion from the fauces it is only of a thin or viſcid mucus or ſaliva. The contrary of all this is true of the cynanche maligna, the ſpecks ſoon degenerate into ulcers, which ſpread rapidly to the adjacent parts, eroding thoſe which lie beneath them. The whole fauces often aſſume a black colour, mucus mixed with blood, a livid ſanies or even pieces of mortified fleſh are ſpit out, and the fœtor of the breath is intolerable.

In the ſcarlatina there is no acrid diſcharge from the noſtrils or inteſtines; in the cynanche maligna the diſcharge from both is often ſo acrid as to excoriate every part it touches.

The worſt hemorrhagies occaſioning bloody ſaliva, bloody urine and ſtools, and bloody ſuffuſion of the eyes, and tinging the ſweat, are ſymptoms which we never meet with in ſcarlatina.

In the progreſs of ſcarlatina the face is generally red and ſomewhat ſwelled; in the cynanche maligna it is pale, ſwelled, and bloated, or ſhrunk and cadaverous.

In the ſcarlatina the mental functions are rarely deranged. In the cynanche maligna, if delirium or coma do not appear at the commencement, they ſeldom fail to ſupervene afterwards.

Various ſymptoms above enumerated, which never appear in ſcarlatina, often attend cynanche maligna from the affection of the fauces ſpreading along the œſophagus to the ſtomach, or even along the whole tract of the inteſtines, and from its ſpreading to the trachea and larger branches of the bronchiæ.*

All the parts in the neighbourhood of the fauces, the euſtachian tube, the internal ear, the parotid, maxillary, and other glands of the neck, more frequently partake of the affection of the throat in the cynanche maligna than in the ſcarlatina.

In the cynanche maligna, the period at which the eruption ſhews itſelf is uncertain; we have ſeen that it ſometimes comes out even on the firſt day; in the ſcarlatina it generally makes its appearance on the third or fourth day.

In the latter it is of a florid colour, and ſoon ſpreads uniformly over the whole or a great part of the body. In the former it often appears in blotches or points, and is frequently either pale or purpliſh.

In the ſcarlatina the appearance of the eruption often brings relief, particularly to the ſickneſs and anxiety; it terminates in a copious deſquamation of the cuticle, and if its appearance failed to bring relief, its termination ſeldom does. In the cynanche maligna it terminates in but a very partial

* All those parts to which the inflammation spreads, are often found on dissection in the same gangrenous state with the throat.

desquamation, which, like the appearance of the eruption, rarely brings relief.

In the scarlatina the eruption for the most part is steady, gradually assuming a brownish hue, which precedes the desquamation. In the cynanche maligna it is often inconstant, disappearing and again coming out several times in the course of the disease.

It is in the cynanche maligna that a retrocession of the eruption, and the symptoms which accompany it, are most apt to occur.

Phrenitis and pneumonia rarely supervene in the scarlatina, nor is it liable to be followed by phthisis.

A gentle sweat, which only sometimes appears at the time of desquamation in the cynanche maligna, and seldom proves critical, very generally accompanies the same period in scarlatina, and is almost constantly attended with an abatement of the symptoms. *

Such are the symptoms of the cynanche maligna, and the means of collecting the prognosis in this disease. Death may happen at any period; it has often happened even on the first day. Dr. Fothergill observes, that in the greater number of cases which terminated fatally under his care, the patient died before the fourth day. Those, he observes, who survived the fourteenth, were thought to be out of danger, at least from the disease itself, though some died unexpectedly after a much longer reprieve. The patient sometimes recovers from the disease, and falls a sacrifice to its consequences, dropsy or other diseases of debility. The anasarca which succeeds the disease, and is generally unattended with danger belongs rather to the scarlatina than cynanche maligna, as it is most frequent and

* See a short parallel of the symptoms of the scarlatina and cynanche maligna, given by Dr. Withering in his Treatise on the Scarlatina.

conſiderable where the eruption is fulleſt and moſt florid. When the voice is much impaired, it ſometimes does not recover its tone for many months or even years.

2. Of the Cauſes of Cinanche Maligna.

The cynanche maligna is one of the few phlegmaſiæ which are produced by a ſpecific contagion. The proofs of its ariſing from contagion, and not from the causes of the other phlegmaſiæ, are ſo well known, that it is needleſs to inſiſt upon them.

It is very generally allowed, that at one time the cynanche maligna was unknown in Europe. Huxham, Mr. Ruſſel,* Lieutaud, and others maintain that it was known to ſome of the ancients. Lieutaud ſays, that Aretæus was the firſt who gave any account of it. It is the opinion of moſt writers, however, that the diſeaſe mentioned by Aretæus under the name Ulcera Syriaca was of a different nature from the malignant ſore-throat. The diſpute is of little conſequence.

It appeared firſt in modern times in Spain about the year 1610; and ſpread thence to Malta, Sicily, Otranto, Apulia, Calabria, and Campagnia, in the ſpace of a few years. It broke out at Naples in 1618, and continued to rage in different parts of that kingdom for no leſs than twenty years.†

Ludovicus Mercatus, phyſician to Philip II, and III, kings of Spain, publiſhed a treatiſe on it in 1612. Andreas Sgambatus, a phyſician of Naples, in 1620. Baptiſta Corteſius deſcribed it about the year 1625. Eleven years after, Oetius Cletius of Signia publiſhed a treatiſe De Morbo Strangulato-

* Mr. Russel in his Œconomy of Nature in Acute and Chronic Diseases, quotes several passages from Hyppocrates, in which he thinks this disease is mentioned.

† Dr. Fothergill's Paper, entitled, Of the Sore-throat attended with Ulcers.

rio, the name which he gives the cynanche maligna. In 1643 Aurelius Severinus, profeſſor of anatomy and ſurgery, and phyſician to the hoſpital of incurables at Naples, wrote on it. Petrus Michael de Heredia, phyſician to Philip IV. of Spain, alſo wrote on this diſeaſe; Dr. Fothergill has not been able to diſcover the preciſe date of his work. Thomas Bartholine publiſhed a treatiſe on it in 1646.

After the time of theſe authors, it ſeems to have diſappeared for many years. The firſt accurate accounts we have of it afterwards, having appeared near our own times.

Dr. Fothergill does not conſider the affections of the throat, deſcribed by Wierus, Foreſtus, and Ramazzini, as the true cynanche maligna, nor does he eſteem as ſuch the ſcarlet fever and ſore-throat which raged at Edinburgh in 1733, an account of which the reader will find in the third volume of the Medical Eſſays.

There is a diſeaſe which reſembles it, ſhortly deſcribed by Tournefort, in his Voyage to the Levant; he calls it a carbuncle or plague-ſore at the bottom of the throat, attended with much fever; but his account is ſo imperfect, that Dr. Rutty thinks it bears a ſtronger reſemblance to the cynanche trachealis.

Dr. Fothergill ſeems to have overlooked Morton's account of a ſcarlet fever which raged in London towards the end of the 17th century, and was very different from the mild form of this diſeaſe deſcribed by Sydenham. "Cæteraque," Morton obſerves "anginæ et peripneumoniæ ſymptomata ſæpius "ingraveſcunt." What he ſays in the next ſentence is very characteriſtic of the cynanche maligna. After the eruption, he remarks, the diſeaſe frequently changes to a malignant form, and then it is highly dangerous; cough, phthiſis, ophthalmia, obſtinate and colliquative diarrhœa, ſtrumous affections, cachexy, leucophlegmaſia, and aſcites, often ſupervene.

The reader will find a particular account of many of the principal works on this diſeaſe in Dr. Willan's Treatiſe on Cutaneous Diſeaſes.

Notwithſtanding the frequent occurrence of cynanche maligna in our days, few of the circumſtances which prediſpoſe to it are aſcertained. Adults are leſs ſubject to it than children, and when they are attacked with it, generally have it in a milder form. Dr. Fothergill ſays he never knew an adult attacked with the cynanche maligna while in health and vigour, in whom it proved fatal. I have repeatedly ſeen it fatal under theſe circumſtances.

It has alſo been maintained, as of the ſcarlatina, that women are more ſubject to it than men, and girls than boys; the accuracy of theſe obſervations, however, is at leaſt doubtful. Thoſe of a weak and lax habit are more ſubject to it than the robuſt and firm. This circumſtance may be regarded as aſſiſting the diagnoſis between the cynanche maligna and the cynanche tonſillaris, which moſt frequently attacks the healthy and vigorous.

The cynanche maligna moſt frequently appears in autumn and the beginning of winter; it ſometimes, however, prevails without interruption for ſeveral years.

The reader will find the ſtate of the weather in the ſummers preceding the appearance of this diſeaſe particularly noticed by writers. It would ſeem, however, that if we except an unuſual degree of warmth and moiſture, we can detect no ſtate of the weather, that particularly prediſpoſes to it.

The circumſtances which tend to increaſe its ſeverity are the ſame with thoſe which increaſe the ſeverity of common typhus, warm and moiſt weather, a ſickly habit of body, putrid effluvia, a number of people being crouded together, eſpecially if labouring under the diſeaſe, and every other cauſe

of irritation, whether making its firſt impreſſion on the mind or body.

It has been obſerved that the cynanche maligna, like the plague, and indeed moſt other contagious diſeaſes, is moſt fatal on its firſt appearance, gradually becoming milder, till towards the end of the epidemic it is ſcarcely attended with any danger.

It alſo reſembles other epidemics, in preventing the prevalence of other diſeaſes while it rages, and in giving a diſpoſition to thoſe which do appear to partake of its nature. The reader will find it obſerved by Huxham,* Ruſh,† and others, that while the cynanche maligna raged, ſore-throats of all kinds, in different caſes approaching more or leſs to its nature, were the moſt frequent diſeaſes; and the former alſo obſerves, that there was a ſurpriſing tendency to eruptions on the ſkin, and to aphthæ, in fevers.

3. Of the Treatment of Cynanche Maligna.

The treatment admits of the ſame diviſion as the ſymptoms, into general and local. To avoid interruption, I ſhall defer the few obſervations to be made on the treatment of certain ſymptoms, obſtinate vomiting, diarrhœa, &c. which are not eſſential to the diſeaſe, till the general plan of cure has been conſidered.

As there are no caſes of cynanche maligna in which local remedies alone are ſufficient, there is not here the ſame reaſon for conſidering the local, before the general treatment, as in the cynanche tonſillaris. As, however, the ſame parts are affected in both caſes it will aſſiſt the memory to adopt the ſame mode of arrangement.

* Huxham on the Ulcerous Sore-throat.

† Med. Obs. and Inq. by Dr. Rush.

Of the local means uſed internally.

Many of the gargles mentioned in treating of the cynanche tonſillaris are uſed here. The medicines which have been termed antiſeptic, and the more acrid applications, are moſt uſeful in cynanche maligna.

During the firſt ſtage the older writers recommended, mild acetous liquors, a decoction of barley with vinegar, the juice of the pomegranate or mulberry, &c. When white ſloughs appeared, they preſcribed a decoction of lupins, vetches, &c. with honey of roſes; when the throat was ulcerated, myrrh or alum mixed with honey of roſes, the unguentum egyptiacum in barley water, the ſulphate of iron and copper, or the diluted ſulphuric or muriatic acids. Even arſenic and the actual cautery were occaſionally recommended.

As ſoon as the ſymptoms were mitigated and the ulcers had loſt the gangrenous appearance, they employed gently aſtringent gargles, and directed the patient to receive into the mouth the fumes of various ſubſtances thrown on live coals.

In this, as in the other ſpecies of ſore-throat, we determine the compoſition of the gargles by reflecting on the ends we have in view in preſcribing them. Three purpoſes are anſwered by them in the cynanche maligna; the acrid matter is waſhed out, which, if allowed to remain in the fauces, at once occaſions the ſpreading of the diſeaſe, diſpoſes to gangrene, and, if ſwallowed, tends to produce oppreſſion and diarrhœa; the tendency to gangrene is at the ſame time more directly counteracted by their ſtimulating property; and the ſecretion from the fauces ſupported; for, however injurious this ſecretion may be in the fauces and other parts of the alimentary canal, ſtill more is to be apprehended from its ſudden failure, or even from a ſudden and conſiderable diminution of it.

It is true indeed that the ſame gargle will not fully anſwer all the foregoing indications; aſtringents, among the moſt powerful means of checking gangrene, tend to impede the ſecretion. It therefore requires ſome attention after we are made acquainted with all the ingredients employed in the compoſition of gargles in this diſeaſe, to ſuit them to the circumſtances of the caſe.

We muſt be directed by the general tendency of the ſymptoms. If the flow of mucus has been conſiderable, but is ſuddenly diminiſhed, and eſpecially if any of the ſymptoms which ſometimes attend ſuch an accident ſupervene, it will be proper, for ſome time, wholly to lay aſide the uſe of aſtringent gargles. If, on the other hand, the ſecretion of mucus continues conſiderable, or has never been ſo, aſtringent gargles will generally be found the beſt.

As other ſtimuli, which may be termed acrid, tend leſs than aſtringents to check this ſecretion, and at the ſame time if uſed with aſtringents, co-operate in checking the tendency to gangrene; it is proper in all caſes to employ the former.

There are two kinds of gargles then employed in the cynanche maligna, thoſe compoſed of acrid, or as they are generally termed ſtimulating ſubſtances, and thoſe compoſed of theſe and aſtringents. There is perhaps no caſe of cynanche maligna, in which it is proper to employ gargles merely aſtringent. A plain decoction of the peruvian or oak bark would be far from a proper gargle in any ſtage of this diſeaſe. Among the ſubſtances beſt fitted for the compoſition of acrid gargles, are the capſicum, myrrh, marine acid, wines that are not aſtringent, or diluted alcohol in any other form.

We do not here dread the motion of the fauces in gargling, as in the worſt caſes of the cynanche tonſillaris; the inflammation generally falling below the degree moſt favourable to

ſuppuration. We often, however, have a more perplexing difficulty to ſtruggle with. It is impoſſible to make children, the moſt frequent ſubjects of this diſeaſe, uſe a gargle. We can generally indeed make them ſwallow a little extract of bark mixed with wine; but this is far from anſwering the purpoſes of a gargle. Many who have been converſant with this diſeaſe, think that its fatality among children is in a great meaſure to be attributed to their ſwallowing the morbid ſecretion from the throat. This, it was obſerved above, ſeems often to induce vomiting, griping pains, and purging of the worſt kind, by cauſing the diſeaſe to ſpread along the alimentary canal. It is very frequently by theſe ſymptoms that children are deſtroyed. They may in ſome meaſure be prevented by from time to time removing the acrid matter by a ſmall ſpunge at the end of a ſtick, and by means of another ſpunge at the other end, the ulcerated fauces may be touched with the mixtures beſt calculated to promote their healing. There is no neceſſity for uſing theſe mixtures in ſuch quantity as to excite ſwallowing. Syringing the throat is a good means of waſhing out the mucus, but caution is requiſite in its employment, when the power of ſwallowing is much leſſened part of the fluid may fall into the trachea.

The vapour of water variouſly impregnated has long been a favourite remedy in cynanche maligna. The patient is directed to breathe the ſteam ariſing from an infuſion of myrrh, camphor, red roſes, camomile flowers, &c. in boiling water or vinegar. * The vapour of myrrh and vinegar in particular, is recommended by ſeveral writers. That of the nitrous acid raiſed in the way propoſed by Dr. C. Smith † often appears to have excellent effects. "The refreſhing an-

* See Huxham and others on this disease.

† See vol. 1st. p. 226.

" tiſeptic vapour," Dr. Willan obſerves, " detached by this " proceſs, and circulated through the room, preſently clears " the patient's throat, and at the ſame time removes the " fœtor both of the breath and perſpiration."

When the ſloughs are numerous and extenſive, other means have been employed to promote their ſeparation. The older practitioners having obſerved that the ſpontaneous ſeparation of the ſloughs is generally attended with a mitigation of the ſymptoms, concluded, by a very inaccurate mode of reaſoning, that could they by any means procure their ſeparation, the ſame good effects would attend it, for they did not regard the ſeparation of the ſloughs merely as a ſymptom, but as the cauſe of returning health; with this view they endeavoured forcibly to rub them off with the finger or an inſtrument, which has been done even by late practitioners. Experience, however, ſufficiently warns us againſt it. " In " a caſe where I was concerned," Dr. Fothergill obſerves, " previous to my being called in, a ſurgeon had endeavoured " to ſeparate the ſloughs by the aſſiſtance of his probe. He " ſucceeded in his attempt without much difficulty, but was " ſurpriſed to ſee the ſame parts covered the next day with " thick dark aſh-coloured ſloughs penetrating deep into the " ſubſtance."

If we do not find the ſloughs beginning to ſeparate from the uſe of the foregoing gargles, all that can be done is to touch them with ſome more acrid preparation, the powder of myrrh, burned alum, the marine acid diluted with honey, &c. applied with a pencil or a ſmall bit of rag. It is perhaps unneceſſary to remark, after what has been ſaid, that in this, as in all other gangrenous affections of the throat, the applications to the fauces ſhould be warm.

Scarification of the parts occupied by the ſloughs, has been

practiſed, but ſeems upon the whole to do more harm than good.

Of the Local Remedies uſed externally.

We leſs generally find occaſion for applications to the external fauces in the cynanche maligna, than in the form of cynanche laſt conſidered.

As the pain and ſwelling are ſeldom conſiderable, local blood-letting is rarely proper; when they are conſiderable, which now and then happens at the commencement, local is preferable to general blood-letting, even where the pulſe is full.

Scarification and cupping of the ſhoulders and back of the head have been employed to remove the pain in this part of the head, but as far as I have been able to perceive, Dr. Fothergill obſerves, without much benefit. Dry cupping has alſo been recommended, but does not ſeem to have been of much ſervice.

Bliſters applied to the nape of the neck are often more ſucceſsful, but except at the commencement, their application in cynanche maligna is a precarious practice. Dr. Clark obſerves, that he emploeyd bliſters in only one caſe of this diſeaſe, and the bliſtered parts became gangrenous. Mr. Colden and others experienced the ſame effect from them, and with reſpect to their ſtimulating property on the ſyſtem in general, the purpoſe for which the older practitioners chiefly employed them, the obſervations made reſpecting it in typhus, are applicable here.

Rubefacients may be employed with more ſafety; their effects, however, muſt be carefully watched. The reader will find them particularly recommended by Quarin, in thoſe caſes where the ſwelling of the glands is conſiderable.

Of the general Means employed in Cynanche Maligna.

It is chiefly on general means that we depend in the treatment of this diſeaſe. As almoſt every thing ſaid of the treatment of typhus is applicable here, a few additional remarks will be ſufficient.

The prejudice in favour of general blood-letting has extended to the cynanche maligna. It is chiefly at the commencement, however, that it has been recommended, for even the older practitioners regarded it as inadmiſſible at an advanced period. Later experience has evinced that it is rarely admiſſible at any period. Dr. Fothergill confeſſes that even in caſes where it ſeemed indicated it was often injurious.

It is needleſs to repeat the obſervations of Huxham, Quarin, Cullen, and indeed all the beſt writers on the diſeaſe to the ſame purpoſe. "The conſequence of evacua tions," ſays "Mr. Colden, "is an inſurmountable tendency to mortifica-"tion, ſo that the very orifice made by the lancet mortifies."

Quarin only admits of veneſection when pneumonia ſupervenes,* and even here he cautions againſt repeating the blood-letting too frequently, and inſiſts on a circumſtance which I have more than once had occaſion to mention, that the appearance of the buffy coat does not always warrant a repetition of blood-letting, for under this coat, he obſerves, there is often a tender black craſſamentum, the parts of which ſcarcely at all cohere. "Hinc patet, quam graviter errant "illi, qui ob ſolam adparentem in ſanguine cruſtam venæ-"ſectionem aut largiorem inſtituunt aut eam repetunt." †

It particularly demands attention; that when the affection of the fauces has ſpread to the trachea, the difficulty of breathing it occaſions, may be miſtaken for pneumonia, and

* This case nearly resembles the pneumonia putrida of foreign writers, which will be considered in treating of pneumonia.

† Quarin De Febribus.

venesection recommended when it is the most fatal step we can take. Hence probably it is that Dr. Fothergill remarks, that the heat, restlessness, delirium, and difficulty of breathing, which this evacuation commonly prevents or mitigates in other cases, in this are increased by it. Nor does the swelling, he adds, of the tonsils, fauces, &c. seem to receive the least benefit from it; on the contrary, though the fullness of these parts decreases, the sloughs thicken and change to a livid, or black colour, the external tumor enlarges, and the spitting is commonly lessened.

We have not here even that argument for the employment of blood-letting which has been so often urged in some other cases of typhus, that a spontaneous flow of blood sometimes brings relief, for here, hemorrhagies, we have seen, from whatever part, are almost uniformly prejudicial. Thus we find, this disease, in its mode of treatment, as in its symptoms and causes, differing essentially from the diseases with which it is classed.

Some equally dissuade from cathartics in cynanche maligna. I have not, however, seen the effects from them which they dread, and many of the best practitioners join in recommending nearly as free a use of cathartics here as in simple fever, particularly in the early stages. By cathartics, only the thinner parts of the blood are carried off, the extreme vessels are excited, and a fruitful source of irritation removed. Physicians have been deterred from the use of cathartics by finding that the worst cases are often attended with diarrhœa, but this inference is not conclusive. The diarrhœa may be an effort of nature to relieve the system in severe cases. In whatever way we explain it, the fact seems to be, that the disease runs its course most favourably when we keep up a free action of the bowels, taking care, however, to proportion the evacuation to the patient's strength.

The advantage derived from emetics at the commencement of the cynanche maligna,* has been obſerved by practitioners from its firſt appearance in Europe. Dr. Cullen alſo recommends nauſeating doſes. Neither are well adapted to the advanced ſtages. Tartariſed antimony and ipecacuanha are the emetics which have been chiefly employed. Some condemn all antimonials, even at the commencement of this diſeaſe, not however, it would appear, on ſufficient grounds.

Phyſicians have not, in the cynanche maligna, as in many other febrile diſeaſes, endeavoured by the hot regimen to induce ſweating, the bad effects which would have attended this practice were too apparent. The aq. ammon. acetat. and other mild diaphoretics, however, have been generally recommended, and, although not to be ranked among the moſt powerful medicines, are often ſerviceable before the typhus is diſtinctly formed. The pediluvium alſo is frequently employed with the ſame view, at an early period. Opium may be ranked in this claſs of medicines. Its exhibition is regulated here by the ſame rules as in typhus. With reſpect to a long liſt of medicines termed diaphoretics, enumerated by authors, many of which I have had occaſion to mention at different times, they are upon the whole of little power, and when given freely, by oppreſſing the ſtomach, often do harm.

As ſoon as the ſtate of the excitement admits of it, we muſt have recourſe to the tonic plan. Various medicines which they termed cordials, were much employed by the older practitioners, particularly the Italian and Spaniſh Phyſicians who firſt practiſed in this diſeaſe, bezoar ſtone, the earth formerly called Armenian bole, precious ſtones, the flowers of the buglofs, borage, endive, ſcordium, ſcorzonera,

* See the observations of Huxham, Withering, Rush, &c.

ſcabioſa, &c. from which it is needleſs to ſay that little is to be expected; yet theſe and gentle diaphoretics, if we except evacuations, were almoſt the only general means they employed, for they did not ſeem aware of how much the ſtate of the throat in this diſeaſe depends on that of the ſyſtem in general; and indeed we cannot wonder that experience taught them not to truſt to their general plans of cure. Some recommended medicines from which better effects might be expected, the carduus benedictus, ammonia, various aromatics, and even a little wine.

Warm aromatic and cordial medicines are ſtill much employed, and it has juſtly been obſerved, that when the throat aſſumes a gangrenous appearance, and the depreſſion and faintneſs are conſiderable, we muſt not be deterred from the uſe of ſuch medicines by the frequency of the pulſe. Many recommend a variety of ingredients in the compoſition of theſe medicines, but it ſeems now to be the opinion of practitioners that their effects are very generally proportioned to the quantity of wine bark and mineral acid which they contain.

The rules for giving the bark, wine, and acids, are the ſame as in typhus, except that when gangrene is actually preſent, the two firſt are given in larger quantity, the bark * as freely as the ſtomach will eaſily bear.

Dr. Willan particularly recommends the oxygenated muriatic acid in this diſeaſe: Mr. Kearſley, a preparation of myrrh.†

* Dr. Withering and some others have condemned the use of bark in cynanche maligna. My own experience tends to confirm the common opinion, that after the excitement is sufficiently reduced, it is a valuable medicine in this disease. When children cannot be persuaded to swallow it, it may be given in the less efficacious form of clyster.

† Gentleman's Magaz. vol. 39.

I have already had occaſion to mention the capſicum among the local remedies employed in the cynanche maligna; it would appear from a variety of obſervations, that it may often be uſed internally with advantage. It has been given in very conſiderable doſes, and in ſome epidemics it is ſaid has ſucceeded better than bark. Mr. Steuart * was one of the firſt who gave it in this diſeaſe. He directs two table ſpoonfuls of the ſmall red pepper, or three of the common Cayenne pepper, and two tea ſpoonfuls of fine ſalt, to be beat into a paſte, on which half a pint of boiling water is poured, and ſtrained off when cold; an equal quantity of very ſharp vinegar being added to this infuſion, a table ſpoonful of the mixture every half hour is a proper doſe for an adult. Under Mr. Stephen's care, alſo, it was exhibited with good effects to 400 patients, and ſeemed to ſave ſome whoſe ſtate had been thought deſperate.

Mr. Collins at firſt gave the bark and capſicum together, but by ſubſequent trials he was led to truſt to the latter alone.†

Swallowing the infuſion, he obſerves, occaſioned ſlight convulſive motions, and a ſenſation of heat in the œſophagus and ſtomach, and in a ſhort time after it was ſwallowed, it produced a general glow over the body, but without conſiderably affecting the pulſe. Mr. Collins uſed Mr. Steuart's preparation of the capſicum, but he thinks ſmaller doſes preferable. It is chiefly in tropical climates that the capſicum has been employed.

It only now remains to make a few obſervations relating to certain ſymptoms, the treatment of which does not come

* See the 12th vol. of the Medical Commentaries.

† Mr. Collins also mentions cases of intermitting fever which yielded to the capsicum.

under the general plan of cure, profuſe diarrhœa, vomiting, hemorrhagies, ſuppreſſion of urine, which occaſionally attends all diſeaſes of debility, and dyſpnœa.

The means of reſtraining diarrhœa are, 1ſt, Thoſe whoſe action is confined to the inteſtines, diminiſhing the ſecretion from their ſurface and allaying the periſtaltic motion, or exciting them to a more ſpeedy evacuation of the offending matter, or correcting its morbid properties: 2dly, Such as act on other parts, there exciting certain effects in ſome meaſure incompatible with diarrhœa; and laſtly, thoſe which tend to reſtore the general vigour of the ſyſtem.

The means of anſwering theſe purpoſes I have already, at different times, had occaſion to point out. It is neceſſary to recollect in the uſe of them, that our object here is to leſſen, not wholly to check the diarrhœa.

Vomiting ſeldom proves obſtinate in this diſeaſe, nor does it frequently occur under circumſtances which ſhould induce us ſuddenly to check it. It generally ariſes from the preſence of irritating matter in the ſtomach, and when it occurs at an early period ſhould be encouraged by camomile tea, or even an emetic. Dr. Fothergill adviſes the vomiting to be encouraged by an infuſion of green tea or carduus benedictus, and obſerves, that by this method he has ſeen the diſeaſe go off with much more eaſe than was at firſt expected. On the evacuation of the offending matter the vomiting generally ceaſes; when it does not, the ſaline mixture in a ſtate of effervescence, the mineral acids or a ſmall quantity of brandy and water ſometimes allay it. It is ſometimes allayed by a cathartic clyſter; for as an emetic tends to check catharſis, catharſis tends to check vomiting. In this way ſmall doſes of magneſia vitriolata much diluted, which often lie on the ſtomach when hardly any thing elſe will, are frequently ſucceſsful.

When other means fail we may ſucceed, as I have frequently witneſſed by a doſe of opium and camphor.

In hemorrhagy from the throat or any part of the head, the noſe, mouth, ears, clyſters ſhould be exhibited, and the patient kept as much in the erect poſture as he can eaſily bear. In all caſes of hemorrhagy the application of cold muſt be as free as it can be made without riſking too great a diminution of temperature; conſiderable doſes of alum and vitriolic acid ſhould be exhibited; while cold and aſtringent applications are made as near as poſſible to the orifices of the bleeding veſſels.* If theſe means fail, the hemorrhagy, for the moſt part, ſoon proves fatal; and when they ſuceeed, their effects are often tranſitory.

In ſuppreſſion of urine alſo a mild clyſter is the firſt expedient. Fomentations, or cold applications to the region of the bladder, are ſometimes ſucceſsful. It has juſt been obſerved, that this ſymptom is very frequently the conſequence of debility. I have ſeen it nearly induced where there was no diſeaſe but debility from want of food. Suppreſſion of urine, therefore, is often relieved by tonic medicines. If other means fail, we muſt call in the aſſiſtance of the ſurgeon, which ſhould not be long delayed. It is of conſequence in preventing this ſymptom, frequently to remind the patient to empty the bladder; ſuppreſſion is moſt apt to happen when its fibres are ſtretched.†

Of dyſpnœa little need be added to what has already been ſaid. If accompanied with pain in the thorax, and cough, there is reaſon to believe that it proceeds from inflammation

* We shall soon have occasion to consider at length the various means employed in hemorrhagy. Those which act by lessening the vis a tergo seldom have place here.

† See what was said of this symptom in speaking of the treatment of small pox.

of the lungs, and it muſt be treated accordingly. As it may proceed from this cauſe although unattended with pain, and the affection of the trachea produces cough as well as dyſpnœa, the nature of this ſymptom in cynanche maligna is often aſcertained with much difficulty.*

If it proceeds from the ſwelling of the glands about the fauces, we muſt, if the ſtate of the patient admits of it, have recourſe to local blood-letting and bliſters; if not, fomentations and rubefacients are the beſt ſubſtitutes. Mr. Colden recommends in this caſe fomentations with bitter and aromatic herbs. If other means fail and ſuffocation is threatened, bronchotomy is the only remedy.

SECT. III.

Of the Cynanche Parotidea.

The Cynanche Parotidea, called in Engliſh the Mumps, is generally ſo mild a diſeaſe that it does not require the aſſiſtance of the phyſician; it will not therefore be neceſſary to conſider it much at length. It is defined, we have ſeen, by Dr. Cullen, that ſpecies of cynanche in which there is great external ſwelling from an enlargement of the parotid and maxillary glands, the reſpiration and deglutition being little diſturbed, and the fever, for the moſt part a gentle-ſynocha.

This ſhort account of the ſymptoms is ſufficient for aſcertaining the preſence of the diſeaſe. The prognoſis, with one exception, is uniformly good.

Towards the termination of the cynanche parotidea, that is, about the fourth day, when the ſwelling of the glands near the fauces begins to abate, ſome degree of tumor frequently affects the teſticles in men, and the breaſts in women. Sometimes, though not frequently, they become very hard and painful, in general, however, with little fever.

But it now and then happens when the tumor of the breaſt or teſticle does not ſucceed that of the glands about the fauces, or when the former does ſucceed the latter but ſuddenly recedes, that the fever, which has been very mild, and which generally abates when the ſwelling of the fauces begins to recede, ſuddenly becomes conſiderable, ſometimes attended with delirium, and has even proved fatal. In this caſe we have reaſon to believe that the inflammation has attacked the brain. I have ſeen the delirium and fever almoſt immediately relieved by taking blood from the head.

This ſpecies of cynanche, like the laſt, is frequently epidemic, and evidently ariſes from contagion. Children are the moſt frequent ſubjects of it. I have ſeen it epidemic in a ſchool of above four hundred boys, when hardly one eſcaped it.

In its uſual form a cooling cathartic, avoiding animal food, and an uniform temperature, alone are neceſſary.

When the train of ſymptoms juſt alluded to ſupervene, it requires more attention. The mode of treatment then differs in no reſpect from that of phrenitis, except in the addition of local means to bring back the ſwelling if it has receded. The continued application of warm fomentations is the beſt means of recalling it.

Whether fomentations, applied to the breaſts or teſticles, would prove ſerviceable where this train of ſymptoms ſuper-

venes without having been preceded by any ſwelling of theſe parts, has not been aſcertained.

SECT. IV.

Of the Cynanche Trachealis.

ONLY one form of Cynanche remains to be conſidered, the Cynanche Trachealis; Dr. Cullen's definition of which has been given.

It ſeems proper in the preſent ſtate of medical knowledge to divide this diſeaſe into two varieties; that which ſometimes appears in adults, and that which attacks children from the time they are weaned till about twelve years of age.

The former, if indeed they are different diſeaſes, although rare, has been long known, now and then appearing alone, rather more frequently complicated with the cynanche tonſillaris or maligna.

Its preſence is readily known from the definition which has been given. The voice and cough, if there be any, for a cough does not conſtantly attend the diſeaſe, have a peculiar ringing ſound. The reſpiration is difficult, ſonorous, and attended with a ſenſe of tightneſs about the larynx. On inſpecting the fauces we perceive nothing uncommon, they are ſometimes redder than uſual, but very ſeldom much ſwelled. When there is much redneſs, or ſwelling, the diſeaſe muſt be regarded as a combination of the cynanche trachealis and tonſillaris. The eyes are red, the face is fluſhed, and as the difficulty of breathing increaſes, becomes ſwelled and purple. Theſe ſymptoms never

continue long without considerably affecting the pulse, and the fever which attends them is a synocha, at least at its commencement. Towards the termination of the disease, when the symptoms have been considerable, the pulse and strength sink.

One of the chief diagnostic symptoms of cynanche trachealis is, that however great the dyspnœa, the deglutition is free. It has long been a maxim in medicine, even before physicians had any distinct ideas of this disease, that that species of cynanche in which the respiration is impeded without any redness or swelling appearing in the fauces, is most to be dreaded.* It will not be necessary to say more of the symptoms of the cynanche trachealis as it appears in adults. The degree of danger is best known from that of the dyspnœa.

With regard to the more common variety of the cynanche trachealis, which affects children only, and has not till lately been accurately described, at least in this country, it will be necessary to consider its symptoms more at length. Among the vulgar in England it is termed the croup or the rising of the lights. In some parts of Britain it is also known by the name of the choak or the stuffing. The reader will find it mentioned by authors under various appellations, morbus strangulatorius, cynanche stridula, angina epidemica, suffocatio stridula, asthma infantum,† angina polipofa or membranacea.

* Gravis est illa species anginæ, (Horstius observes) cum gutturis interni musculi sic inflammantur, ut neque in faucibus neque in cervice, quidpiam adpareat, unde Celso merito pestiferus, Galeno morbus extreme peracutus, Hippocrate vero lethalis dicitur.

† We shall find reason to believe that the disease known by this name has been improperly considered as the same with the croup.

Of the Symptoms of the Cynanche Trachealis Infantum.

This diſeaſe often makes its attack merely with a degree of dyſpnœa, which often comes on very ſuddenly. As it increaſes, the breathing is performed with a wheezing ſound, apparently from the paſſage of the air being ſtraitened.

The patient at the ſame time, if he is old enough to give an account of his feelings, complains of a ſenſe of tightneſs about the larynx, generally accompanied with ſome degree of pain, and almoſt always with ſome tenderneſs on preſſure. Some pain may often be perceived on turning the head, when there is no pain felt while it is ſtill.

The dyſpnœa ſometimes increaſes rapidly, in other caſes ſo ſlowly that the patient complains of some difficulty of breathing for ſeveral days before he is ſeriouſly ill. The wheezing is ſometimes, though rarely, attended with a degree of rattling. The ſtate of the breathing at length becomes ſuch, that the ſhoulders are raiſed at each inſpiration, the abdominal muſcles act ſtrongly, and there is a violent alternate elevation and depreſſion of the ribs and ſcapulæ. The breath at the commencement is generally free from fetor, but ſeldom remains ſo.

The voice has a ſhrill ringing ſound, which has been compared to a noiſe iſſuing from a brazen tube, or the crowing of a cock. A cough very generally attends the cynanche trachealis of children, which alſo partakes remarkably of the ſame ſound.* The cough is generally dry. When there is

* Dr. Rush says he has often seen the croupy cough remain several days after all the other symptoms were gone. I have known this cough return in those who had formerly laboured under the croup on exposure to cold, without any other symptom, and go off without any remedy.

any expectoration, eſpecially after the diſeaſe has laſted for ſome time, the matter ſpit up frequently has a purulent appearance, and is often marked with ſpecks of florid blood. The purulent appearance is an unfavourable ſymptom; in ſome caſes it has a white cheeſey appearance, and flakes are ſometimes thrown up by coughing, reſembling pieces of a membrane which we ſhall find lines the trachea in this diſeaſe, the expulſion of which often brings conſiderable relief.*

There is generally nothing particular to be obſerved in the fauces. Sometimes they look red and even a little ſwelled, at other times the uvula, velum pendulum palati, and tonſils are intenſely red, but without ſwelling; and we ſometimes obſerve a little puſlike matter in the fauces, ſimilar to that ſpit up.

As in the cynanche trachealis of adults, the diglutition is ſcarcely ever difficult or even at all impeded.

The appearance of the face is the ſame as in other inſtances of great dyſpnœa, at firſt red and ſwelled; ſooner or later, if the diſeaſe increaſes, becoming purple and livid. There is often a degree of ſoft white ſwelling externally about the larynx, which ſometimes ſpreads along the courſe of the trachea. The hands and feet too are often affected with the ſame kind of ſwelling.

Such are the local ſymptoms of the croup, which may be ſaid to conſtitute the diſeaſe, the general ſymptoms not differing materially from thoſe attending moſt other phlegmaſiæ.

It has already been obſerved, that ſymptoms of general derangement are ſeldom the firſt which ſhew themſelves in this diſeaſe; in ſome caſes, however, the patient appears

* The patient has sometimes been suddenly restored to health by the excretion of this membrane. See Michaelis de Ang. Polyp.

oppreſſed with a general laſſitude and languor before the dyſpnœa becomes very troubleſome.

As ſoon as the difficulty of breathing is conſiderable, the pulſe becomes frequent, ſtrong, and hard; the patient complains of head-ache, and becomes reſtleſs, with a hot parched ſkin, thirſt, and a white and often very foul tongue.

The urine is generally limpid, diſcharged in ſmall quantity, and ſometimes with difficulty. In the progreſs of the diſeaſe it is paſſed in greater quantity, is turbid, and towards the favourable termination generally depoſits a copious ſediment, which by ſome has been attributed to the abſorption of purulent matter from the trachea.

The bowels are generally coſtive during the whole of the diſeaſe, and often much inflated. Vomiting is not very common, when it does occur, much viſcid matter, ſometimes mixed with bile, is frequently diſcharged. The ſtomach is often oppreſſed with wind, and eructation brings temporary relief.

If the ſymptoms do not abate, the pulſe begins to loſe its ſtrength and hardneſs, and becomes weak and intermitting or tremulous, and as the fatal termination approaches, remarkably frequent.

In the cynanche trachealis, as in moſt other phlegmaſiæ, however alarming the other ſymptoms of fever, there is ſeldom any delirium. A degree of coma frequently ſupervenes.

If the ſymptoms are ſevere and without remiſſion, the patient ſeldom ſurvives more than three or four days, and frequently dies in four and twenty hours, or even leſs. In the more lingering caſes the ſymptoms gradually increaſe, and many of thoſe which precede death in other febrile diſeaſes ſupervene. The mouth becomes very foul; the reſpiration more hurried, ſmall, and difficult, with great

reſtleſſneſs and dejection. Under theſe circumſtances that ſpecies of delirium which is moſt allied to coma ſometimes comes on, the patient ſeeming ſtupid, and frequently muttering to himſelf with marks of great impatience. The pulſe in ſuch caſes is often near two hundred, tremulous, and irregular. At length it can hardly be felt, the extremities become cold, and the patient ſoon expires.

Death ſometimes approaches in a different way; profuſe ſweats and fainting fits precede the coldneſs of the extremities. The eyes appear glazed, the lips, tongue, mouth, and throat parched, and the patient falls into general convulſions, the immediate forerunner of death.

Some of Dr. Molloy's patients* had a tumor behind the ears, which run ſpeedily to mortification, and many, he obſerves, had profuſe weeping behind the ears of a very corroſive nature.† The ceaſing of the cough is to be ranked among the fatal ſymptoms, as we might, a priori, have ſuppoſed, ſince its abſence can only be attributed to increaſing inſenſibility, and deprives the patient of the chief means of removing the morbid ſecretion from the trachea.

But whatever accidental ſymptoms, if I may uſe the expreſſion, may appear, if the ſtrength fail, the breathing become remarkably ſmall and hurried, the face aſſume a livid and cadaverous appearance, the pulſe flutter, and the extremities become cold, we know that death is at hand.

Suffocation may take place at all periods of the diſeaſe. When the patient dies on the firſt or ſecond day, it is gene-

* Their disease seems to have rather been the acute asthma, than the croup.

† Dr. Bard saw the cynanche maligna complicated with croup epidemic. In some patients, instead of the croupy symptoms, there were ulcers behind the ears. See the American Phil. Transact. vol. i.

rally from this cauſe. Death from other cauſes ſeldom happens earlier than the third day, and often later.

The chief critical ſymptom is a ſpontaneous flow of ſweat, which ſometimes laſts for ſeveral days. Spontaneous vomiting and diarrhœa are alſo ſometimes attended with a mitigation of the ſymptoms. The ſame may be ſaid of a diſcharge of phlegm from the noſe. Dr. Bard ſays ſalivation ſometimes proves critical. A copious ſediment from the urine is alſo regarded as critical. Dr. Ruſh obſerves, that he has frequently ſeen an eruption of little red blotches in the croup which generally brought relief. He ſometimes obſerved them appear and diſappear ſeveral times in the courſe of the diſeaſe.

Upon the whole, whatever be the attending ſymptoms, if the pulſe become fuller, more ſteady, and leſs frequent, the breathing freer and leſs hurried, the peculiar ſound of the voice and cough begin to wear off, and the patient appear leſs anxious and oppreſſed, the prognoſis is good. We cannot, however, with certainty rely on the favourable change till the remiſſion has laſted a conſiderable time; for after the moſt favourable appearances, the diſeaſe has returned with greater violence, and proved fatal.

The diſeaſe deſcribed by Dr. Miller, under the name of acute aſthma, which ſeems at leaſt allied to that we are conſidering, often wholly aſſumes the intermitting form, as appears both from his obſervations and thoſe of Dr. Molloy and Dr. Ruſh. It is on this account that Dr. Miller terms the diſeaſe aſthma. He adds acute, to diſtinguiſh it from chronic aſthma, into which, he obſerves, he has ſeen it changed, the patient ever after remaining ſubject to the latter.

It is of the firſt importance to diſtinguiſh a remiſſion, from a complete ſolution of the diſeaſe; a miſtake here,

by inducing the practitioner to abandon the means of cure too early, has frequently proved fatal. All that can be ſaid on this head is, that where the patient ſtill remains dejected and oppreſſed, however free the breathing may be, we have reaſon to dread a return; and the more the ſymptoms have inclined to thoſe of acute aſthma, (of the diagnoſis between which and the croup I am about to ſpeak more particularly), the more reaſon we have to fear that the relief will only be temporary.

Such is the general courſe of the cynanche trachealis infantum; as in almoſt all other diſeaſes, we occaſionally meet with certain anomala in it which do not deſerve to form part of its hiſtory. Thus it has appeared unaccompanied by fever, as obſerved by Dr. Ruſh and others;* the ſhrillneſs of the voice and cough, Dr. Home obſerves, ſometimes goes off before death; even the leading ſymptoms, the dyſpnœa and cough are occaſionally abſent in the progreſs of the diſeaſe. It may be mentioned among the anomala of the croup, that the membrane excreted by coughing has ſometimes appeared black and gangrenous.

Dr. Home,† who has the merit of having firſt made this

* Dr. Dixon gives an account of a case in which the cynanche trachealis appeared as a chronic disease in an adult. See a paper by him in the 9th vol. of the Medical Communications.

† Dr. Home is generally supposed in this country to have been the first who distinguished the croup. But it appears from the observations of Michaelis and other foreign writers, that it was known in many parts of the Continent long before his observations were published. And even in our own country it was accurately described in a paper by Dr. Starr in 1749, published in the Philosophical Transactions for 1750. Dr. Starr's account is in some respects confused; from the cynanche maligna in many of the cases he saw having been complicated with the affection of

diſeaſe known in Britain, divides the croup into two varieties, the one he terms inflammatory, the other purulent. In the former, the pulſe is ſtrong, the face florid, the thirſt great, and the diſeaſe, he obſerves, is relieved by evacuations; in the other, the pulſe is very frequent and ſoft, the debility great, the tongue moiſt, the thirſt leſs than in the former caſe, the anxiety much greater, and here, he obſerves, evacuations haſten death. It would appear, however, that theſe ought rather to be eſteemed different ſtages, than varieties, of the diſeaſe, the former, if the ſymptoms are not ſoon relieved, degenerating into the latter.

I have already obſerved that the croup and the acute aſthma of Dr. Miller and others, uſually regarded as the ſame diſeaſe, are ſuſpected by ſome to be of a very different nature, and it has even been aſſerted that a perfect diagnoſis between them may be obtained. The following is offered by Michaelis.

All the convulſive affections, he obſerves, are more violent in the acute aſthma, than in the croup. In the former alſo the difficulty of breathing is greater. The acute aſthma makes its attack almoſt inſtantaneouſly, giving no warning of its approach; the croup comes on more gradually. In the

the larynx. But he has not only given a good account of the croupy symptoms, but a drawing of an expectorated membrane which had lined the whole of the trachea and part of the larger branches of the bronchiæ. Dr. Home, however, may still be regarded as the first person in this country who had any accurate ideas of the disease, for Dr. Starr made no dissections, and understood its nature so little, that he believed the preternatural membrane which he saw coughed up to be the internal coat of the trachea and its branches; although, indeed, in one part of his paper he observes, that were the trachea laid open, he believes it would be found to be lined with a morbid secretion.

acute aſthma, the peculiar ſhrillneſs of the voice and the pain of the trachea increaſed on preſſure, almoſt conſtant attendants on the croup, are never obſerved. The acute aſthma obſerves certain periods. In this diſeaſe the urine is thin and watery; in the croup, at the beginning, red, afterwards turbid and white. The pulſe in the acute aſthma is ſmall and contracted; in the croup, at its commencement, hard, full, and inflammatory, afterwards ſoft and weak.

The reader will find from what Dr. Cullen ſays in the laſt edition of his Noſology, that notwithſtanding the attempt of Michaelis to diſtinguiſh theſe diſeaſes, with which he muſt have been acquainted, as he there mentions Michaelis's treatiſe, he ſtill ſeems to regard them as the ſame diſeaſe. The obſervations of ſome ſucceeding authors, however, ſeem to confirm thoſe of Michaelis, and improve his diagnoſis. The acute aſthma, ſays Dr. Ruſh, or as he calls it, the cynanche trachealis ſpaſmodica, comes on ſuddenly, and generally in the night. It has frequent and perfect intermiſſions for hours, and in ſome inſtances for days, without the leaſt ſenſible diſcharge from the trachea, and it yields to antiſpaſmodic remedies, particularly to the warm bath. The croup, or as Dr. Ruſh calls it, the cynanche trachealis humida, comes on gradually, and moſt commonly in the day time. It continues or increaſes for ſeveral days without any remarkable remiſſion or even abatement of the ſymptoms. It is accompanied with a diſcharge of phlegm or mucus from the trachea, or with the ſtools, and does not yield to antiſpaſmodics.

When the foregoing circumſtances are well marked, they will generally be ſufficient to diſtinguiſh the diſeaſes; but they are far from always being ſo. The croup, in particular, often aſſumes more or leſs of the intermitting form; and with regard to the latter part of the diagnoſis, a diagnoſis

from the effects of remedies is always objectionable, and particularly so, in so rapid a disease. The above diagnosis however, should be kept in view, and must serve till experience has furnished a better. To the circumstances mentioned, it might be added, that the voice in the acute asthma is often hoarse, and the breathing, not wheezing, but rattling.

It is asserted by some that the peculiar membrane lining the trachea in the croup, is not found in those who die of acute asthma. When we see a chapter in Dr. Miller's treatise, entitled Dissections, we expect to find this point determined, but Dr. Miller gives us an account of only two dissections, and that so imperfectly, that it is impossible to know whether or not the membrane was present.

From the observations of others, however, we have reason to believe that the membrane is not formed in the acute asthma. Dr. Rush, in his first publication on these diseases, confounds them; but in a later treatise, in which he attempts the diagnosis, he gives us an account of the dissection of a child that died of the acute asthma, in which no membrane nor even mucus was found in the trachea, this organ and the lungs appearing in a perfectly sound state. I believe the membrane, says Dr. Rush,* to be the effect of the croup only, and not an accidental effect of the spasmodic asthma as I once believed. The sudden manner in which the convulsive asthma makes its attack, and its so frequently assuming an intermitting form, oppose the idea of its being connected with the formation of a membrane in the trachea.

It may be observed, however, that, contrary to what is generally supposed, the symptoms of croup are not essentially connected with the presence of this membrane. The ringing voice has often disappeared, especially towards the fatal ter-

* See his Med. Obs. and Inq. vol. 1.

mination, where the membrane certainly was prefent. This happened in the fixth cafe related by Dr. Home. Dr. Bard obferves, that all the fymptoms of the croup often intermitted where the membrane was found after death. A cafe is related in the Philofophical Tranfactions of a boy who died of phthifis; a membrane was found in the trachea, pieces had often been fpit up, but no fhrillnefs of voice is mentioned among the fymptoms. The reader will find a fimilar cafe related by Dr. Dixon, in the 9th volume of the Med. Commun. in which the membrane was repeatedly formed and fpit up without any fhrillnefs of voice; and Dr. Bard, on the other hand, gives a cafe in which the fymptoms of croup were well marked, where no membrane but merely figns of inflammation were found in the trachea. It can hardly be fuppofed indeed that any part of the membrane is formed, as foon as the ringing of the voice and cough are perceived.

Michaelis has not only attempted to diftinguifh the croup and acute afthma, but alfo offers a diagnofis between the former and mere inflammation of the trachea. But in this inftance he has fucceeded worfe than in the other.

The cynanche trachealis, he obferves, may eafily be diftinguifhed from the croup. In the former there is no fymptom of a preternatural membrane prefent in the trachea and bronchiæ. The dyfpnœa he accounts for by the inflammation of the trachea, and afferts that the peculiar fhrillnefs of voice which we obferve in the angina polypofa, or membranacea, as Michaelis calls it, does not attend the true cynanche trachealis. Dr. Cullen and others remark that the ringing voice does attend the cynanche trachealis of adults. In the cynanche trachealis, Michaelis adds, there is a violent pain about the trachea; in the croup but very little. Different degrees of the fame fymptom, it is evident, muft afford a diagnofis little to be depended on. The reader befides will

recollect that the pain in the croup, as obſerved above, is increaſed on preſſure; a circumſtance we ſhall find peculiarly characteriſtic of pain proceeding from inflammation.

It is of much conſequence to diſtinguiſh from the croup, the ſymptoms produced by the introduction of an extraneous body into the trachea. Mr. Balfour told me, ſays Dr. Home, that he attended a child in a diſeaſe, which, from the ſimiliarity of voice, appeared to him the croup. The child died, and a piece of ſhell which he had ſucked in with the breath was found lying acroſs the trachea, about an inch below the glottis, and the membrane was inflamed and dry. Here even Michaelis confeſſes the diagnoſis to be extremely difficult, and that the moſt acute may find it impoſſible to diſtinguiſh the caſes. But a cautious phyſician, he obſerves, may proceed with ſafety; he ſhould enquire with much care, whether or not the patient feels any pain, whether it is acute, and in what place it is ſeated. If he feels no pain, or if the ſeat of the pain is in the trachea, or ſome of its branches, or if it changes its place, being felt during coughing in the upper, and at other times in the inferior part of the trachea, or, laſtly, if it occupy the trachea, and it ſolely, but is extremely acute and circumſcribed, the caſe is not to be regarded as croup, but as ariſing from an extraneous body in the trachea. If even theſe ſymptoms, he adds, ſhould leave me in doubt, I would immediately have recourſe to bronchotomy, by which the nature of the diſeaſe would be diſcovered, and the noxious body, whether produced by, or introduced into, the trachea, removed.

When a ſimilar ſet of ſymptoms, as ſometimes happens, ariſes not from the introduction of an extraneous body into the trachea, but from the generation of ſome excreſcence or concretion different from that which takes place in the croup, it is, if poſſible, more difficult to aſcertain the nature of the

caſe. The beſt diagnoſtic here is the ſlow and gradual way in which the diſeaſe comes on ; and the febrile, being moderate compared with the local ſymptoms.

I need ſay nothing of the means of diſtinguiſhing the croup from certain diſeaſes, ſuch as cynanche maligna, hooping cough, chronic aſthma, epilepſy, hiſteria, pneumonia, &c. for which thoſe unacquainted with its ſymptoms have miſtaken it.

Appearances on Diſſection.

In the trachea we find a preternatural membrane lining but ſcarcely adhering to it, for it may always be eaſily ſeparated without deſtroying its ſhape. It comes out in the form of a tube exactly adapted to the cavity it lay in. In many caſes indeed it cannot be ſaid to adhere at all, and there is a conſiderable quantity of puſlike matter lying between it and the ſurface of the trachea. This membrane often extends beyond the diviſion of the trachea, lining the larger branches of the bronchiæ, and looſely adhering to them. The purulent matter extends beyond the membrane, often into the ſmalleſt branches of the bronchiæ, and even in ſome inſtances into the air veſicles. Mr. Wood found it in theſe veſicles in the 7th and 8th caſes related by Dr. Home. On removing it there is no appearance of ulceration in the coats of the trachea and bronchiæ, but the traces of inflammation are in general very obvious, and ſometimes extend, Burſerius obſerves, to the very extremities of the bronchiæ. It has ſometimes happened, as in more than one diſſection recorded by Dr. Home, that no traces of inflammation could any where be obſerved; but this is comparatively rare.

By ſqueezing the lungs a conſiderable quantity of a whitiſh

glutinous fluid may ſometimes be forced out. In different caſes of the cynanche trachealis the lungs aſſume, according to Burſerius, all the different appearances obſerved after pneumonia, which are ſoon to be laid before the reader. Sometimes, however, they are found.*

Small polypous concretions are often found in the veſſels of the lungs and in the right ſide of the heart; never, Burſerius obſerves, in the left ſide or in the aorta. Theſe concretions, I have already had occaſion to obſerve, ſeem to be formed in articulo mortis, or ſoon after death, and the reaſon of their not being found in this caſe in the left ſide of the heart, ſeems to be, that the blood from extreme dyſpnœa is chiefly collected in the right. It is alſo owing to the dyſpnœa which precedes death, that the veſſels of the head are generally found very turgid.

The preternatural membrane preſents different appearances in different caſes. Sometimes, Michaelis obſerves, it is as thin as paper, in other caſes ſo thick that it almoſt fills up the whole cavity of the trachea. It is often of different thickneſs in different parts, and the thickeſt part is ſometimes the uppermoſt and ſometimes the reverſe. In ſome caſes it is ſoft and pulpy, in other caſes ſo firm and tough that it will bear maceration in water for ſeveral days; but however tough it is in the trachea, it becomes more tender in the bronchiæ, and is always ſoft before its termination. In ſome caſes it is quite white, in others marked with red ſpots, and it is now and then uniformly of a dark colour, and ſometimes black. Some

* The appearances of the lungs in those who die of the croup, Michaelis observes, are various; sometimess they are sound, sometimes slightly inflamed, sometime there is a sanious matter extravasated in different parts of them, sometimes the matter found in them is purulent, and sometimes merely a watery fluid, the quantity of which is often considerable.

have thought this membrane poſſeſſed a vaſcular, others, a fibrous ſtructure; the former opinion appears erroneous, and the latter is not confirmed by general obſervation.

Of the Remote Cauſes of the Cynanche Trachealis.

The chief ſubjects of this diſeaſe are children from the time they are weaned till about twelve or thirteen. After they are weaned, the younger they are the more they are liable to it. It appears to be moſt common in marſhy countries and near the coaſt.

It is very generally agreed that the croup is not contagious, but many believe it to be hereditary.

It reſembles the other phlegmaſiæ, in being moſt apt to attack thoſe who have already laboured under it. It has been ſaid, however, that after the firſt attack it generally appears in a milder form.*

Cold is the chief exciting cauſe. It is more frequent in winter and ſpring than at other ſeaſons, and ſeems particularly apt to ariſe from ſudden changes in the weather. It is not improbable that certain ſtates of the alimentary canal may aſſiſt in producing it. Underwood, in his Treatiſe on the Diſeaſes of Children, obſerves, that the change from milk to food of harder digeſtion, is probably ſometimes the cauſe of the croup. The ſame author alledges that it may be occaſioned by fevers or chronic diſeaſes that reduce the ſtrength.

The acute aſthma in its cauſes as well as its ſymptoms reſembles the croup, the ſame age prediſpoſes to both, and the application of cold ſeems the chief exciting cause of both.

* See Dr. Alexander's Treatise on the Croup.

Among the exciting caufes of acute afthma, Dr. Millar ranks a laxity of the folids, food of difficult digeftion, and a morbid weaknefs of the digeftive organs.

Of the Nature of the Cynanche Trachealis.

Of the opinion which attributes this difeafe to an inflammation of the lungs it is unneceffary to fay any thing.

The firft probable opinion was fuggefted by Dr. Home. "When there happens," he obferves, "a very great fecretion "of this coagulable fluid from the glands of the trachea in "children, they are either not fufficiently attentive or too "young to fpit it up. The thinner parts are caried off dur-"ing expiration, while the remainder is thickened and com-"preffed by the obftruction which the narrownefs of the glot-"tis oppofes to the exit of the air from a larger canal. Every "circumftance, he continues, encourages its concretion into a "folid firm membrane, while the more internal parts of the "mucus contiuue ftill fluid, and the continual fecretion of "more keeps it feparated from the parts below."

But Dr. Home explains the converfion of this mucus into pus by experiments of Sir John Pringle, the inaccuracy of which I have already had occafion to notice. We have feen befides, that the membrane may be formed without occafioning fymptoms of croup; which on the other hand may exift without the formation of any membrane.

Dr. Rufh of Philadelphia, in a letter to Dr. Millar, publifhed in 1770, takes a very oppofite view of the fubject; fo far from agreeing with Dr. Home in fuppofing the preternatural membrane to be the caufe of all the fymptoms, he regards it merely as an adventitious circumftance fupervening

after the diſeaſe has laſted for ſome time. The diſeaſe he regards as a ſpaſmodic affection. But it appears, from what was ſaid above, that Dr. Ruſh did not at firſt properly diſtinguiſh the acute aſthma and croup.

Michaelis has attempted to point out the difference of the nature of theſe diſeaſes; his opinion of the former nearly correſponds with that of Dr. Ruſh: with reſpect to the croup he agrees with Dr. Home in regarding the preternatural membrane as the cauſe; but this membrane, inſtead of being concreted mucus, is compoſed, he maintains, of lymph, and is of preciſely the ſame nature with the polypous concretions found in the heart and large blood-veſſels. This opinion he ſupports at conſiderable length and with a great variety of arguments, for which I ſhall refer the reader to his work. He concludes with the following obſervations. Theſe circumſtances being granted, none can heſitate in ranking the preternatural membrane among the true polypi. It conſiſts of the ſame matter, has the ſame figure, and with reſpect to its being thinner and leſs compact than polypi generally are, this is to be conſidered as a matter of ſmall moment; nor indeed is the difference conſtant, nor does it ſeem of more weight than that polypi are ſometimes ſolid and ſometimes hollow.

But admitting this membrane to be wholly compoſed of lymph, from the different circumſtances attending its formation and that of polypi, and the different ſituations in which they are placed we cannot regard them as of the ſame nature. Beſides, if all that Michaelis ſays were admitted, there would ſtill be the ſame objections to this opinion as to Dr. Home's. Why has this membrane exiſted without occaſioning ſymptoms of croup? Why have theſe ſymptoms been obſerved where no membrane was found?

Dr. Cullen's opinion of this diſeaſe is different from any

of thofe mentioned, as the reader will infer indeed from what has already been faid. He regards it as arifing from an inflammation of the larynx, combined with a fpafmodic conftriction of the glottis. "Though this difeafe," he obferves, "manifeftly confifts in an inflammatory affection, it does not "commonly end either in fuppuration or gangrene. The "peculiar and troublefome circumftance of the difeafe feems "to confift in a fpafm of the mufcles of the glottis, which, "by inducing a fuffocation, prevents the common confequen-"ces of inflammation. When this difeafe terminates in "health it is by a refolution of the inflammation, by a ceaf-"ing of the fpafm of the glottis, by an expectoration of the "matter exuding from the trachea and of the crufts formed "there. And frequently it ends without any expectoration "or at leaft with fuch only as attends an ordinary catarrh."

To this opinion, by far the moft probable, fome objections might be found. Why does the difeafe chiefly attack children? What proof is there of the fpafm of the glottis? Dr. Cullen indeed grants that fuffocation fometimes happens in confequence of the matter collected in the trachea and its branches. The ftrongeft objection to Dr. Cullen's opinion is, that traces of inflammation are not always found in the trachea of thofe who die of this difeafe. It is far from being improbable, however, that although the cynanche trachealis confifts in an inflammation of the trachea, the patient may die after the inflammation is gone, the effufion which relieves the inflammation occafioning fuffocation. When we reflect on the means of cure in the true croup, we cannot, I think, entertain a doubt of its being of an inflammatory nature.

Of the Treatment of Cynanche Trachealis.

It is unneceſſary to give the treatment of the cynanche trachealis of adults and that of the croup ſeparately; we have every reaſon to believe them the ſame diſeaſe, and whether they are ſo or not, experience has aſſured us that the mode of treatment in them is the ſame.

The obſervations made on the treatment of the phlegmaſiæ in general ſtill apply. It will only be neceſſary therefore to make ſuch additional remarks as particularly relate to this diſeaſe.

If we conſider the acute aſthma and croup as the ſame diſeaſe, the opinion of practitioners concerning the principal means employed are ſo contradictory, that we ſhall find ourſelves much at a loſs what plan to adopt.

Dr. Home, Dr. Cullen, and moſt other writers on this diſeaſe ſpeak decidedly of the advantages of blood-letting. Of all the remedies employed in this diſeaſe, Michaelis obſerves, blood-letting holds unqueſtionably the firſt place. Dr. Rutty on the other hand obſerves, "I have tried evacu-"ations of all kinds; frequent bleeding and ſevere bliſtering "were of no ſervice." And with him Dr. Ruſh, in his firſt publication, and Dr. Millar agree. 'It is difficult to "diſcover," ſays Dr Crawford, in his Theſis de Cynanche Stridula, 'in what caſes Dr. Millar judged veneſection proper." But it is impoſſible for us to read the works of theſe writers, and believe that they are ſpeaking of the ſame diſeaſe.

Without attending to the imperfect diagnoſis which we poſſeſs between croup and acute aſthma, on comparing together the obſervations of thoſe who have been moſt converſant with them, we ſhall find, that in both we may be guided in the employment of veneſection by the

ſtate of the pulſe; if it be ſtrong and hard, veneſection will be found uſeful.

In the true croup, when the pulſe becomes ſoft and weak, as happens in the latter ſtage, blood letting, on which we chiefly rely at an early period, is no longer proper.*

In the acute aſthma, on the other hand, in which blood-letting is generally hurtful, it is found beneficial if the pulſe be ſtrong and hard. There can be little doubt, I think, of the diſeaſe deſcribed by Mr. Ruſſel, in his Œconomy of Nature, &c. under the name Angina Inflammatoria Infantum, being the acute aſthma. Yet he obſerved an abatement of the ſymptoms after blood-letting. Dr. Ruſh alſo obſerves, that blood-letting relieves the acute aſthma when it is accompanied with pneumonic ſymptoms, but when theſe ſymptoms do not appear, evacuations always do harm. In the caſes deſcribed by Drs. Millar, Molloy, and Rutty, in which blood-letting was always prejudicial, the pulſe, was either natural, or ſuch as would deter from blood-letting in the croup itſelf.

By the ſtate of the pulſe, then, we are led conſtantly to employ blood-letting at the commencement of the true croup, but not after we have reaſon to believe that what Dr. Home calls the purulent ſtate has commenced; we are led to employ it very rarely in the acute aſthma, but ſometimes here alſo, proportioning the extent of the evacuation to the ſtrength of the patient and hardneſs of the pulſe.

While we are guided by the ſtate of the pulſe, we ought not to neglect any circumſtance tending to eſtabliſh a diagnoſis between the diſeaſes; an attention to which will confirm the judgment we thus form.

* Home and others.

After the propriety of blood-letting has been aſcertained, in determining its extent we are influenced by a variety of circumſtances, which I have had occaſion to enumerate, the ſtate of the pulſe, habit of body, age of the patient,* &c. Dr. Home ordered no leſs than five ounces to be taken from a child of fifteen months, labouring under the croup. The pulſe ſtill remaining hard, he ordered a repetition of the blood-letting to the ſame extent on the ſame day. On the following day he ordered the child to be bled largely with leeches, and theſe repeated evacuations were followed by the beſt effects. We ſeldom, however, find it neceſſary to carry blood-letting as far as this. It has been propoſed, as in ſimilar caſes, to let blood from the jugular vein, when it can be readily opened, it is the beſt.

With regard to catharſis in the croup, if we employ it with a view to diminiſh the inflammatory diatheſis, the obſervations made reſpecting blood-letting are nearly applicable to it. Blood-letting, however, anſwers this purpoſe much better, and cathartics are only neceſſary for the regular and free excitement of the bowels. Dr. Ruſh particularly recommends calomel in the croup, and thinks it poſſeſſed of ſome ſpecific power independently of the evacuation it occaſions. The bark, he ſays, is hardly a more certain remedy in intermittents, than calomel in the croup, if a large doſe be given at the commencement and ſmall doſes continued throughout its courſe; and ſome late writers have recommended a ſtill freer uſe of this medicine, and truſt to it alone for the cure of the diſeaſe.

There has been ſome difference of opinion reſpecting emetics in this diſeaſe. Dr. Home objects to them, chiefly however on theoretical grounds; and experience ſeems to

* See the observations on blood-letting in continued fever.

warrant a very different opinion of them. They are employed in the croup with a double view. At an early period, with the hopes of cutting ſhort the diſeaſe; in a more advanced ſtage, with a view to expel the preternatural membrane, which is often brought up by the act of vomiting. The reader will find caſes related by Michaelis in which this happened. There is no author, however, who gives ſo favourable a teſtimony of the effects of emetics in the croup as Dr. Crawford. In that part of Scotland, called the Carſe of Gowrie, he obſerves, where the croup is very frequent, the conſtant practice is to give an emetic at the commencement, even before the employment of blood-letting or cathartics, and this practice, he adds, is not only ſafe but very ſucceſsful, few dying when a timely emetic has been exhibited.

It is generally judged proper, however, to begin with blood-letting, by which more than one advantage is gained. We both take the earlieſt opportunity of employing the remedy on which we place moſt reliance, and leſſen the determination of blood to the head during the operation of the emetic.

There is alſo much difference of opinion reſpecting the uſe of diaphoretics in the croup; and the advantage derived from them ſeems more doubtful. Almoſt all authors, however, recommend the pediluvium. It is common with nurſes, in many parts of Scotland where the diſeaſe is frequent, to immerſe the whole body in warm water as ſoon as the diſeaſe ſhews itſelf, which ſometimes, it is ſaid, wholly removes it. Next to the warm bath, nauſeating doſes appear to be the moſt uſeful diaphoretics in the croup, and they are uſeful we ſhall find in another way. The acetate of ammonia, and other diaphoretics recommended by authors, do not ſeem to be of much uſe.

In the diſeaſe deſcribed by Dr. Rutty and Dr. Molloy,

which appears to be nearly the ſame as that deſcribed by Dr. Millar, diaphoretics were the medicines chiefly relied on. Dr. Molloy obſerves indeed, that thoſe only recovered in whom he ſucceeded in bringing out a ſweat.

Reſpecting antiſpaſmodics, it would appear, on comparing a variety of obſervations, that the more the diſeaſe approaches to the acute aſthma, properly ſo called, they are the more beneficial. In the well-formed croup they ſeem to be quite uſeleſs. "Though we ſuppoſe," Dr. Cullen obſerves, "that "a ſpaſm affecting the glottis is often fatal in this diſeaſe, "I have not found antiſpaſmodic medicines to be of any "uſe. Dr. Millar, on the other hand, Dr. Ruſh, and others, found them the moſt ſucceſsful medicines in the acute aſthma. Dr. Millar chiefly employed muſk and aſafœtida, and after repeated trials, he informs us that he was taught chiefly to confide in aſafœtida, very large quantities of which he found neceſſary. "An ounce of this gum," he obſerves, "has ſometimes been taken by a child of eighteen "months in the ſpace of forty-eight hours, and almoſt as "much at the ſame time injected by clyſters, allowance "being made for the reſidue of the gum which is loſt in "making the ſolution."

Some of the remedies termed expectorants are uſeful in the croup. I have already had occaſion to mention emetics and nauſeating doſes. Opiates after the ſymptoms are allayed by blood-letting are often ſerviceable. By allaying the cough, they render the matter to be expectorated thicker, and conſequently the expectoration more eaſy. Their employment, however, requires caution, both on account of the inflammatory nature of the diſeaſe, and becauſe we cannot greatly allay the cough without increaſing the dyſpnœa. Gum ammoniac and ſquills have been recommended, but in the in-

flammatory ſtage they are too irritating, and afterwards they ſeem uſeleſs.

While the inflammatory ſymptoms continue, the diet ſhould be very diluent and ſtrictly antiphlogiſtic. It may be uſeful when the ſymptoms run high to abſtain from food of every kind for the firſt twenty-four hours. Nitre is a good addition to the drink.

As the patient is generally much reduced, the bark is often neceſſary to reſtore the ſtrength, but in the true croup it muſt not be given till all tendency to inflammation has ſubſided. The bark may be given more early in the acute aſthma. It is particularly ſerviceable during the remiſſions.*

Such are the remedies acting on the ſyſtem in general; the local means form a very eſſential part of the treatment.

We ſtill find blood-letting the moſt powerful. If general blood-letting is not performed from the jugular vein it is proper to aid its effects by taking blood from the external fauces; and the local as well as the general blood-letting ſhould be repeated according to the ſtate of the ſymptoms. After proper evacuations, bliſters are of great uſe. They ſhould be applied as near as poſſible to the part affected. They do not ſeem to be of equal uſe in the acute aſthma. Dr. Molloy tells us that their application was attended with no advantage whatever in the caſes he ſaw. Dr. Millar, however, thinks a bliſter between the ſhoulders a means of preventing the recurrence of the paroxyſm.

Rubefacients have not been much recommended in the croup. Dr. Millar found them uſeful applied to the extremities in the acute aſthma.

There is perhaps no other form of cynanche in which

* See the observations of Dr. Millar, Mr. Russell, and others.

breathing the ſteam of vinegar and water is ſo beneficial. In whatever manner it acts, whether by mixing with and diluting the thick matter which clogs the bronchial veſſels, or by its ſtimulating quality increaſing the ſecretion from them, it is found to looſen the cough, to promote expectoration, and relieve the dyſpnœa. Some recommend applying the ſteam of water externally to the neck. Bliſtering is certainly more beneficial, and both cannot well be employed.

From the vicinity of the trachea and fauces, many adviſe ſwallowing from time to time ſome emollient fluid, oil, or mucilage which is preferable becauſe it is leſs apt to load the ſtomach. I have ſeen conſiderable relief obtained by ſuch means. If ſmall doſes, however, do not ſucceed, little is to be hoped from larger ones.

It has been propoſed in this diſeaſe to leſſen the proportion of oxygen in the air, from which there is reaſon to expect conſiderable advantage.

When none of the foregoing means prove ſucceſsful; and particularly when the dyſpnœa greatly increaſes, bronchotomy is the only remaining chance of relief. This operation is leſs formidable than it appears, and if carefully performed is generally ſafe. Dr. Home ſaw the propriety of it in the worſt caſes of croup, and was the firſt who propoſed it as a laſt reſource. Michaelis is bolder, and recommends it in all caſes where the ſymptoms do not yield readily to other means. He gives the arguments for and againſt it at conſiderable length, for which I muſt refer to his Treatiſe. In avoiding the vulgar prejudices againſt this operation he runs, perhaps, to the oppoſite extreme, and conſiders it more trivial than it really is. One caution given by Dr. Crawford is not to be overlooked, that while we are endeavouring to extract the preternatural membrane, both the artificial paſſage and that by the glottis may be ſo obſtructed as to occaſion ſuffoca-

tion. In the convulſive aſthma this membrane is leſt often formed. Here, therefore, if the ſeat of the diſeaſe is in the larynx, bronchotomy will bring more immediate relief with leſs danger.

The uſe of tonic medicines, the cold bath, a diet of eaſy digeſtion, a ſtrict attention to the ſtate of the bowels, and guarding againſt the cauſes of taking cold, are the beſt means to prevent a recurrence of this diſeaſe.

CHAP. X.

Of Pneumonia.

Pneumonia is Dr. Cullen's eleventh genus. It is defined by him,

"Pyrexia, dolor in quadam thoracis parte, dyſpnœa, "tuſſis."

He divides it into two ſpecies, the peripneumonia and pleuritis. The propriety of this diviſion we ſhall ſoon have occaſion to conſider.

SECT. I.

Of the Symptoms of Pneumonia.

The firſt ſenſe of uneaſineſs referred to the thorax and the cough are ſometimes ſo ſlight as to be almoſt overlooked, or

regarded as nothing more than ſuch as in a greater or leſs degree frequently attend fevers, ſo that, for ſome time, the patient is believed to labour under nothing more than common fever; he is affected with ſhivering, often alternating with fits of heat, and complains of thirſt and anxiety, the breathing is hurried, the pulſe more frequent than natural, and the temperature increaſed.

In general, however, this diſeaſe makes its attack in a leſs ambiguous way. A ſevere pain and cough, with much difficulty of breathing, and a ſtrong, hard, and frequent pulſe, are often the firſt ſymptoms. When the pain, and a degree of dyſpnœa ariſing from it, continue for any length of time without cough and fever, the diſeaſe, we ſhall find, is of a different nature from pneumonia.

Such, in fact, is an enumeration of all the ſymptoms of pneumonia, which are much leſs complicated than thoſe of many of the foregoing diſeaſes. In conſidering each of theſe ſymptoms ſeparately, we ſhall find them varying conſiderably in different caſes.

The dyſpnœa, the moſt conſtant ſymptom of pneumonia, becomes conſiderable in all caſes as the diſeaſe advances; the breathing is often ſhort and frequent, the violence of the pain preventing a full inſpiration; or where the pain is either dull or abſent, it is oppreſſed and laborious, accompanied with anxiety and a ſenſe of weight about the præcordia.

It is greateſt during inſpiration, and generally greater when the patient is in ſome particular poſture. Sometimes it is greateſt when he lies on the ſide affected, ſometimes the contrary. In many caſes he is eaſieſt on the back or breaſt, and very often the erect poſture is neceſſary, ſome degree of which indeed is almoſt always ſo. When the inflammation is conſiderable, the breath is ſenſibly hotter than uſual.

The pain, in different caſes, has its ſeat in all the different

parts of the thorax. It is moſt frequently felt about the ſixth or ſeventh rib, near the middle or rather more forwards.

It is a belief among the vulgar that the pain in pneumonia is always in the left ſide; and it is a common error not to regard the caſe as pneumonia unleſs the pain be in the ſide. It is very frequently, however, under the ſternum, the clavicles, the ſpine, or the ſcapulæ. It has been an opinion maintained by the beſt informed, that inſtead of the left, pneumonia moſt frequently attacks the right ſide. This obſervation is made both by Van Swieten and Triller.* The latter farther obſerves, that in this ſide it is leaſt dangerous. All ſuch obſervations ſeem founded on a partial view of the ſubject. It has been obſerved, ſays Wendt,† that when the pain in pneumonia occupies the left ſide, the danger is greater than when it is confined to the right. I have not, however, found this to be the caſe, and the number of my patients who died of this diſeaſe in the right ſide is only greater by one than that of thoſe who died of it in the left.

The pain, like the difficulty of breathing, is moſt felt in particular poſtures, which are different in different caſes. In moſt caſes it is fixed, ſometimes it ſhoots in various directions, ſometimes it only ſhifts its place, and a change of place from the ſides to the clavicles or ſcapulæ has been regarded as a favourable ſymptom. But Wendt juſtly obſerves, that we can make no other inference from it, but that the diſeaſe has changed its ſeat; I have more frequently, he obſerves, known a pain of the arms to ſupervene in pneumonia, and this I have always found ſalutary.

The kind and degree of the pain is not leſs various than its

* Triller de Pleuritide.

† Wendt de Pleuritide, in Sandifort's Thesaurus.

ſeat. Sometimes it is exquiſitely acute, and during inſpiration almoſt intolerable, only differing in its greater ſeverity from the rheumatic affection called a ſtitch in the ſide. At other times it is more general and obtuſe, and in ſome caſes rather a ſenſe of weight than of pain. Sometimes it is only felt when the patient lies on the right or left ſide and makes a full inſpiration or coughs; this caſe has been termed the pleuritis occulta, becauſe the pain is only felt by an effort. In ſome inſtances, however, it is not felt at all, and the practitioner is left to diſcover the nature of the diſeaſe by the other ſymptoms. There is ſo little alarming in the appearance of ſuch caſes, the patient being only affected with more or leſs cough, conſiderable difficulty of breathing, which often prevents his lying down, and a greater or leſs degree of fever, that the aſſiſtance of the phyſician is frequently not requeſted till it can be of no ſervice.

It is chiefly the different ſeat, kind, and degree of the pain, which has given riſe to the diviſion of pneumonia, which we ſhall preſently have occaſion to conſider at length, into pleuriſy peripneumony, paraphrenitis, pericarditis, &c.

Cough is a very conſtant, and when the pain is ſevere, a very diſtreſſing, attendant on all inflammations of the thoracic viſcera. In ſome caſes it is dry, in others attended with expectoration; and although dry at the commencement of the diſeaſe it rarely continues ſo during its progreſs. The occaſional abſence of the ſpitting has given riſe to a uſeleſs diviſion of pleuriſy into dry and humoral, which is as old as the days of Hippocrates.

The appearance and conſiſtence of the matter ſpit up varies much. At the commencement it is generally thin, becoming thicker during the progreſs. The prognoſis depends much on the kind of cough and the appearance of the matter expectorated. Celſus obſerves, that when there is no expectoration, the prog-

nofis is bad, but worfe when the expectoration is bloody ; the truth of the latter part of this obfervation experience has fince called in queftion ; and although a fpitting of much frothy blood is always an alarming fymptom, it is now generally admitted that the matter fpit up being tinged with blood, which it ufually is, if lefs favourable than an expectoration without blood, affords a much better prognofis than no expectoration at all. The matter fpit up being greenifh, of a dark brown colour, or thin and acrid, fo as to excoriate the epiglottis, or fanious and fetid, is very unfavourable. A bland, copious,* free, white or yellowifh expectoration of a thick confiftence, is the moft favourable. A vifcid expectoration is unfavourable. The vifcid globular fputa, fays Huxham, are bad ; and Bianchus obferves, in his Hiftoria Hepatica, that we cannot always draw a favourable prognofis from the expectorated matter being copious and thick, but on the contrary, that a very vifcid expectoration, gradually becoming more fo, often portends a fatal termination. It has been an obfervation from the infancy of medicine, that much rattling in the breaft before the matter about to be expectorated is brought up, is unfavourable.

Upon the whole the greater relief the expectoration brings, the better is the prognofis. Every fpitting, Wendt obferves, which relieves the pain and renders the breathing freer, muft be regarded as favourable, let the colour of the matter be what it may, green, livid, or even black.†

* Schroeder justly observes, that when the expectoration is livid and sanious, the more copious it is, the worse is the prognosis. Schroeder de Pleuritidum partitione, in his Opusc. Med.

† This observation is to be understood with some limitation ; a black expectoration may be regarded as favourable, because it gives temporary relief ; but it always indicates a bad state of the lungs. I do not

If, on the other hand, the expectoration has been ſcanty or abſent from the beginning; and ſtill more if it fails during the progreſs of the diſeaſe; if it is difficult and brings little relief, we dread ſuppuration or gangrene. An expectoration of a thin yellow matter is noticed by many writers, which is very unfavourable. It is termed a bilious ſpitting, and thought by ſome to characterize what has been called the bilious pneumonia, of which I ſhall ſoon have occaſion to ſpeak more particularly.

Suppuration is chiefly to be dreaded when the expectoration is ſcanty or abſent; a tendency to gangrene when the matter coughed up is livid and ſanious.

The ſpitting has been regarded as a diagnoſtic between peripneumony and pleuritis, that is, between inflammation of the ſubſtance of the lungs and that of their membranes; but we ſhall find this diagnoſtic as fallacious as others. Nothing can be more inconſiſtent than the obſervations of authors on this head. Dr. Cullen, in his definition of pleuritis, obſerves, that the cough, although at firſt dry, becomes moiſt and ſometimes bloody. Wendt remarks, that when a patient labouring under pleuritis begins to ſpit, he no longer regards the caſe as a ſimple pleuritis, but a combination of pleuritis and peripneumony. Sydenham, on the other hand, ſpeaks of expectoration as a conſtant ſymptom in the true pleuriſy.

Such are the local ſymptoms of pneumonia and their principal varieties; but no combination of theſe conſtitutes pneumonia without the preſence of fever. The fever, it is obſerved above, often ſhews itſelf as early as any of the local ſymptoms, and the latter are never preſent for any conſiderable length of time without being attended by the former. If we except

allude to a blackish blue appearance which the mucus of the lungs often assumes, which is always favourable.

the difficulty of breathing and cough, we ſhall find no ſymptom of pneumonia ſo conſtant as a frequent pulſe.

The pulſe at the commencement, as in moſt other phlegmaſiæ, is generally ſtrong, hard, and frequent. Several authors have obſerved, that in pneumonia it often differs on different ſides of the body. Zimmermann gives a caſe in illuſtration of this; and Cleghorn ſays it is often moſt obſcure on the ſide affected. It was obſerved of ſimple fever, that the pulſe is ſometimes oppreſſed at the beginning, and riſes on blood-letting; the ſame has been remarked of pneumonia.* But there is a ſpecies of pneumonia which comes on with a depreſſed pulſe that ſinks on blood-letting, which I ſhall ſoon have occaſion to notice more particularly.

Soon after the commencement the face becomes fluſhed, the ſkin hot and dry, the urine ſometimes quite limpid and in large quantity, which has ſince the days of Hippocrates been regarded as an unfavourable ſymptom; at other times, ſcanty and high-coloured.

The bowels are ſeldom regular, but either coſtive or too much relaxed. The thirſt is conſiderable, and the tongue often dry, white, and rough. In ſhort all the ſymptoms of ſynocha are ſuperadded to the foregoing.

Idiopathic pneumonia agrees with the other phlegmaſiæ in being rarely attended with delirium or coma, if, according to Boerhaave, we except thoſe caſes which are terminating by ſuppuration. Even in theſe indeed they are far from being common.

Reſolution is the only favourable termination of pneumonia; and is generally attended with a copious and free expectoration. It appears a contradiction in terms to ſay that the

* Huxham and others.

termination is by resolution when the matter expectorated is evidently purulent. It has long been taken for granted that the formation of pus is always attended with the destruction of parts, so that the word implies not only the formation of pus, but also the ulceration which frequently attends it.

Physiologists have been puzzled to account for the presence of pus in the lungs, where it was impossible to trace any marks of ulceration. De Haen supposed it to be formed in the blood, and poured out by the exhalents. Dr. Cullen accounts for its presence by the experiments of Sir John Pringle above alluded to.* Those of Mr. Home, demonstrating how readily pus is formed by inflamed secreting surfaces, removes the difficulty.

If we except a free expectoration, no evacuation more frequently attends the favourable termination of pneumonia than a flow of sweat; any degree of general moisture appearing on the skin is favourable; a sweat seldom fails to bring relief, and if it be universal and copious often carries off the disease; a sweat which brings no relief, however, is to be regarded as unfavourable †

Hemorrhagy from the nose often brings relief. Hoffman considers it most salutary when it occurs about the fourth day. It is seldom, however, attended with a perfect crisis. Hemorrhois also, though less frequently, attends the remissions of pneumonia. Many reckon blood in the sputa favourable,

* Introduction to the 2d part.

† Wendt observes, that if the symptoms do not soon remit, the sweat often proves fruitless or even hurtful. Much sweating, says Quarin, which does not relieve the symptoms, is dangerous. And Huxham remarks, that the fluid which the patient drinks, running off quickly by any of the excretories, even by profuse sweating, has ever since the days of Hippocrates been regarded as unfavourable.

ſo that moderate hæmoptyſis may perhaps be ranked among the critical hemorrhagies of this diſeaſe.

The appearance of the miliary eruption is favourable when not forced out by the heating regimen, particularly, Allionius * obſerves, when the diſeaſe has ariſen from cold.

High-coloured turbid urine, depoſiting a copious ſediment, frequently, but not always as ſome alledge, accompanies the reſolution of pneumonia.

Although diarrhœa ſometimes brings relief, particularly, ſays Schroeder, at an advanced period, it leſs frequently does ſo than the preceding evacuations; and is upon the whole, particularly at an early period, to be regarded as unfavourable, except there be bile or other irritating matter in the bowels.† Whatever oppreſſes the bowels is particularly hurtful in pneumonia. Symptoms of indigeſtion, therefore, eſpecially much flatulence, are unfavourable. In ſuch caſes, Schroeder obſerves, a ſpontaneous vomiting is often critical.

The diſcharge from the mucous membrane of the noſe and fauces is alſo unfavourable. This caſe is termed by Huxham the catarrhal pneumonia, and he regards its prognoſis as bad.

Pneumonia ſometimes terminates by inflammation and ſuppuration of the parotid glands, or by eryſipelatous inflammation of the ſurface.‡

It is evident that every metaſtaſis is not favourable, the inflammation may ſeize on a part equally or more vital than that which it leaves. The liver and ſpleen are the viſcera moſt frequently attacked in metaſtaſis of pneumonia.

* De Febre Miliare.

† Quarin de Feb.

‡ Inflamed swellings, says Quarin, sometimes appear behind the ears, or on the legs, or other parts, and prove critical in pneumonia. Huxham and others make similar observations.

A general remiſſion of the ſymptoms, for the moſt part, precedes any of the favourable terminations juſt mentioned.

The unfavourable terminations of pneumonia are, ſuppuration and gangrene, which it has in common with the other phlegmaſiæ, and certain terminations peculiar to itſelf.

We have reaſon to ſuppoſe that ſuppuration will take place, if ſigns of reſolution do not ſhew themſelves within four or five days, if there be either no ſpitting or ſuch as brings no relief, if the ſymptoms have not yielded to blood-letting and proper medicines, eſpecially if delirium with rather a ſoft undulating pulſe ſupervene.

That ſuppuration has actually begun we know from frequent irregular ſhiverings following the ſymptoms juſt enumerated without any manifeſt cauſe; from the pain being mitigated or removed while the dyſpnœa continues; from the pulſe becoming fuller, ſofter, and either ſlower or more frequent; from the cheeks and lips looking red; and from an increaſe of thirſt and fever in the evening.

We have reaſon to believe that a collection of matter, which in the lungs is termed a vomica, is formed, when after the above ſymptoms there is an obſtinate dry cough, the reſpiration being difficult, ſhort, rattling, and more frequent than uſual; when the patient is able to lie only on the ſide affected; when febrile exacerbations return at intervals, particularly in the evenings, with redneſs of the cheeks and lips, the dyſpnœa cough and fever being increaſed by eating and exerciſe; when the thirſt is conſiderable, and there are ſweats towards morning, eſpecially about the throat and forehead, with turbid urine, a palid countenance, waſting of the fleſh, and great debility. The peculiar fever (termed hectic) which attends ſuch caſes, we ſhall ſoon have occaſion more particularly to conſider.

When the abſceſs is ſituated in the moſt external part of the lungs immediately under the ribs, we may often perceive a ſoft ſwelling between the ribs, and a fluctuation may ſometimes be diſtinctly felt in it.

Many of the foregoing ſymptoms are not eſſentially connected with the preſence of a vomica. The rattling breathing often ariſes from other cauſes; in many caſes after the vomica is formed the patient can lie on both ſides without inconvenience, and it has frequently been remarked that its formation is often preceded by little or no ſhivering.

Upon the whole, however, the ceaſing of the pain, or the pain being changed into a ſenſe of weight, without any of the evacuations, which it was obſerved above frequently attend reſolution,* while the cough, dyſpnœa, and fever ſtill continue, the pulſe looſing its hardneſs, and the fever aſſuming the form of hectic, leave no room to doubt the preſence of an abſceſs in the lungs. About the ſeventh day, not the fourth, as ſome have alleged, is the period at which, if the diſeaſe has continued without any conſiderable remiſſion, we have reaſon to fear ſuppuration; reſolution has taken place as late as the eleventh or twelfth day; but this is rare. When there are conſiderable remiſſions, it may take place at a much later period. It has been remarked that it ſeldom happens after the fourteenth day; I have known it happen after the diſeaſe had laſted four or five weeks.

Except a vomica be ſituated on the ſurface of the lungs, ſo that the fluctuation may be felt externally, in which caſe the matter may be diſcharged by an opening made through the intercoſtal muſcles, it generally proves fatal. There are four ways in which this may happen. It may without burſting occaſion hectic fever, which gradually exhauſts the

* Dr. Millar's Treatise on the Diseases of Great Britain.

ſtrength. Abſceſſes of the lungs, however, when their ſides have become ſo callous as to prevent abſorption, have remained for many years without producing fever, or otherwiſe greatly impairing the health. When the abſceſs is large, and burſts into the ſubſtance of the lungs, it often produces immediate ſuffocation. When the matter is diſcharged into the cavity of the thorax, the diſeaſe has been termed empyema; the matter falls down upon the diaphragm when the patient is in the erect poſture, occaſioning a ſenſe of weight in the lower part of the cheſt. The difficulty of breathing, (which is now greatly increaſed by lying down, eſpecially on the back) cough, and hectic fever continue, and gradually exhauſt the ſtrength. In the empyema we may often perceive the fluctuation of the matter in the cavity of the thorax. When the vomica is ſmall, its burſting into the ſubſtance of the lungs does not occaſion ſuffocation, but purulent expectoration. An ulcer of the lungs is generally the conſequence, and phthiſis ſucceeds, the ſymptoms of which we ſhall ſoon have occaſion to conſider. It ſometimes happens, however, in very healthy habits, eſpecially in ſuch as are free from any ſcrophulous tendency, that the ulcer formed by the burſting of a ſmall abſceſs in the lungs heals, and the patient gets well.

An abſceſs of the lungs ſometimes, though rarely, terminates favourably in another way; caſes are alluded to by Quarin and others, in which the pus was abſorbed, and paſſed by urine or ſtool, and ſometimes we have reaſon to believe it has been depoſited in other parts of the body; but theſe are occurrences ſo rare, that in forming the prognoſis they are hardly to be taken into the account. Wendt obſerves, that when pneumonia terminates by ſuppuration, the abſceſs generally burſts before the twentieth day of the diſeaſe. It is often, however, delayed to a much later period.

The termination of pneumonia in gangrene, which is very rare, is always immediately fatal. The tendency to gangrene is known from the unusual violence and obstinacy of the symptoms. When gangrene is about to take place there is a diminution of the pain, the cheeks become red, the pulse sinks, and the matter expectorated assumes an ichorous appearance. When the gangrene has actually taken place, the pain ceases without any of the salutary evacuations above-mentioned, the countenance becomes pale, the pulse still more feeble and intermitting, cold clammy sweats appear on different parts of the body, hiccup, loss of sight, and general stupor supervene, and the patient soon expires. Dr. Cullen, however, justly observes, that the termination by gangrene is so conjoined with that by effusion, which I shall presently have occasion to consider, that their symptoms are hardly to be distinguished.

It is supposed by many that pneumonia may terminate in schirrus, which is known, according to Quarin, by great difficulty of breathing, and a troublesome dry cough remaining after the other symptoms are gone, and much increased by exercise or a full meal; it is distinguished from a vomica by the absence of hectic fever, and the symptoms being nearly stationary for a considerable length of time, while in the vomica they generally increase.

In some cases, however, there seems to remain after pneumonia, a difficulty of breathing and oppression, indicating no fixed disease of the lungs, but mere debility; this is most apt to happen in nervous irritable habits, and when the disease has been long protracted.

The terminations peculiar to pneumonia are, suffocation from an affusion of red blood, or of a serous fluid into the substance of the lungs, and hydrothorax the consequence of an exudation from the pleura.

The fatal terminations of pneumonia are generally preceded by an evident increaſe of the whole, or part of the ſymptoms, the pain is often felt more generally throughout the thorax, the difficulty of breathing is increaſed, the patient becomes more watchful, or more rarely he is affected with ſome degree of coma or delirium. The cough is more diſtreſſing. The matter expectorated mixed with a larger proportion of blood, or brought up with greater difficulty, either owing to the bronchiæ being clogged by the quantity of viſcid fluid poured into them, or the increaſing debility.

Upon the whole, the leſs difficult the breathing, the leſs ſevere the cough, the more copious and free the expectoration, and the greater the relief it brings, the more regular and firm, and the leſs frequent and hard the pulſe, and the leſs the ſtrength is reduced, the better is the prognoſis.

Pneumonia generally proves fatal before the ſeventh day, ſometimes as early as the third; but where death is occaſioned by the burſting of a vomica it is commonly much later. Vomicæ, it is obſerved above, generally burſt before the twentieth day, but if they are ſucceeded by an empyema or phthiſis, death may be delayed to a much later period.

There are few diſeaſes whoſe diagnoſis is more ſimple than that of pneumonia, the only difficulty is to diſtinguiſh it from caſes of ſymptomatic and falſe pleuriſy, of which I ſhall preſently have occaſion to ſpeak. Yet there is no ſymptom in pneumonia which is not met with in other diſeaſes. Few are more frequent than pain in ſome part of the cheſt, cough, more or leſs difficulty of breathing, and fever; but where theſe, or the three laſt of theſe, are combined, we are aſſured of the preſence of pneumonia. The diagnoſis of this diſeaſe is eaſy, becauſe the ſymptoms which mark it are few and diſtinct.

Although we ſucceed in removing the ſymptoms of pneu-

monia, the danger is not paſt, the diſeaſe is frequently renewed, and the ſecond attack is often more violent, and almoſt always more dangerous than the firſt. Wendt even ſpeaks of a recovery from relapſes as rare, " non ſemper " ſunt lethales;" and Quarin remarks, " Pleuritis recidiva " vix curanda." Theſe obſervations, however, apply only to the more ſevere caſes; and even in theſe, I have ſeen the diſeaſe return ſeveral times, and yet terminate favourably.

SECT. II.

Of the Appearances on Diſſection.

On inſpecting the lungs, the inflamed parts appear redder than uſual, the colour, Dr. Baillie remarks, being partly florid, and partly of a darker hue, and the pleura covering the inflamed parts is crowded with fine red veſſels. " The " inflamed ſtate of the lungs," the author juſt mentioned obſerves, " is to be diſtinguiſhed from blood accumulated in " ſome part of them, after death, in conſequence of gravi- " tation. From the body lying in the horizontal poſture " after death, blood is often accumulated at the poſterior " part of the lungs, giving them there a deeper colour, and " rendering them heavier. In this caſe there will be found " no crowd of red veſſels filled with blood, nor any other " mark of inflammation of the pleura. Where blood too is " accumulated in any part of a lung after death, from gra- " vitation, it is always of a dark colour, but where blood is " accumulated from inflammation, portions of the inflamed " part will appear florid."

We often find in the ſubſtance of one or more of the lobes of the lungs a collection of a greeniſh yellow pus, ſometimes mixed with blood of a brown or dark red colour, and of a grumous appearance. There is ſometimes an extravaſation of blood in the lungs without abſceſs,* and ſometimes of coagulable lymph.

Pus is often found between the folds of the pleura, the abſceſſes opening on the ſurface of the lungs, or the pus being ſecreted by the inflamed membrane itſelf; very frequently in the bronchiæ. Portions of the lungs and pleura are ſoft, and ſometimes wholly deſtroyed, having been as it were diſſolved in the purulent and ſanious matter. There are caſes on record, in which portions of the pleura were deſtroyed, the lungs being entire. This is very rare; and Schroeder and others remark, that it is unuſual for the pleura to be affected with inflammation without the lungs partaking of it.

The latter around an abſceſs are generally more ſolid than natural in their texture, owing, Dr. Baillie obſerves, to coagulable lymph being thrown out during the inflammation. This ſubject I ſhall have occaſion to reſume in ſpeaking of phthiſis.

When the inflamed pleura remains entire it is often covered with florid ſpots.

On examining the lungs more particularly we frequently find ſmall lurking ulcers in the parenchyma and the branches of the bronchiæ; ſometimes the lungs are indurated in different parts; and Dr. Cleghorn obſerves, that they are now and then changed into a hard ſubſtance which ſinks in water. This increaſed gravity, Dr. Baillie obſerves, often ariſes merely from an increaſed quantity of blood.

* Wendt, &c.

The aqua pericardii is generally altered either in quantity or quality. In ſome caſes it is much more copious than uſual; in ſome, wholly wanting, and the pericardium itſelf adheres to the heart throughout its whole extent. It ſeems to be this conſequence of diſeaſe which has given riſe to the opinion of the pericardium being ſometimes wanting. Like the pleura it is now and then ſoft and partly diſſolved. The aqua pericardii is often tinged with blood, and in ſome caſes wholly conſiſts of a greeniſh purulent matter.

The heart itſelf, though not often, ſometimes partakes of the morbid appearances. Traces of inflammation, extending more or leſs deeply into its ſubſtance, are now and then obſerved. The inflamed part is more crowded than natural with ſmall veſſels, and there is ſometimes found in it ſpots of extravaſated blood* Abſceſſes, ulcerations, and even gangrene, have ſometimes, though rarely, been found in this organ. In ſome caſes, on cutting through its ſides ſmall quantities of pus appear ſcattered here and there among its fibres.

Polypous concretions are found in its cavities and in the large blood-veſſels; the nature of theſe I have already had occaſion to notice. The large veſſels are ſometimes preternaturally diſtended, and the blood in them is generally of a dark colour.

The lungs often appear conſiderably enlarged, apparently from their containing a greater than uſual quantity of extravaſated fluids. Where the pleura is inflamed they are often covered with a ſoft whitiſh viſcid cruſt of coagulable lymph, which frequently aſſumes a membranous form, and is the cement of the adheſions between the folds of the pleura. There is no conſequence of pneumonic inflammation ſo common as theſe adheſions, they are either occaſioned by

* Dr. Baillie's Treatise on Morbid Anatomy, p. 12.

inflammation ſo ſlight that it is not attended with the uſual ſymptoms of pneumonia, or they ariſe alſo from ſome other cauſe, for they are found in many who never laboured under the ſymptoms of this diſeaſe. Dr. Monro, in his Anatomical Lectures, obſerves, that he has examined the thorax of few adults without finding more or leſs of ſuch adheſions. Some imagine that the adheſions left by pneumonia are a principal cauſe of the frequent recurrence of this diſeaſe; except when very extenſive however, in which caſe they frequently occaſion habitual dyſpnœa, they are attended with little inconvenience; and the frequent recurrence of pneumonia is readily accounted for by the tendency to future attacks left by all inflammations, and the expoſed ſituation of the lungs.

It is very common to meet with morbid appearances in the abdomen of thoſe who die of pneumonia. The liver and pancreas are often found indurated, and the former enlarged. There is ſometimes alſo induration of the ſpleen, and very frequently worms are found in the upper parts of the inteſtines, particularly in the jejunum. In a very large proportion of the caſes related by Wendt, lumbrici were found in this inteſtine. The reader will alſo ſee ſimilar caſes in the 21ſt Epiſtle of Morgagni de Sedibus et Cauſis Morborum.

The only morbid appearance uſually found in the head is congeſtion, the effect of the dyſpnœa. The reader will find it particularly noticed by Dr. Cleghorn and others.

SECT. III.

Of the Varieties of Pneumonia.

It is only lately that pneumonia has been regarded as one diſeaſe. By the older writers, and by many even of our own days, particularly foreigners, it has been divided into different diſeaſes, according to the place which the inflammation occupies. When it is ſeated in the ſubſtance of the lungs, the diſeaſe is termed peripneumonia; when in the pleura, pleuritis; in the diaphragm, paraphrenitis; in the heart, carditis; and even inflammations of the mediaſtinum and pericardium are regarded as diſtinct diſeaſes. Certain combinations of theſe affections alſo have peculiar appellations; that of the inflammation of the ſubſtance of the lungs, for example, and their inveſting membranes, have been termed pleuroperipneumonia or peripneumopleuritis.

There is ſo ſtrong and in ſome places ſo general a prepoſſeſſion in favour of theſe diviſions of pneumonia, that it will be neceſſary to conſider at ſome length on what obſervations they are founded, and how far they are uſeful in practice.

Dr. Cullen, apparently more in compliance with the opinions of others than relying on his own obſervation, has given a place in his Noſology to the diviſion of pneumonia into peripneumony and pleuritis. The former he defines, pneumonia, with a pulſe not always hard, ſometimes ſoft, the pain dull, the reſpiration conſtantly difficult, and often only to be

performed in the erect posture, the face swelled and purple, the tongue generally moist, and the matter expectorated sometimes bloody. Other authors give a similar, though in some respects a different account of peripneumony. In the peripneumony, Hoffman observes, the inflammation is seated more deeply in the substance of the lungs, the pain is more dull and extends to the back and scapulæ, the breathing more laborious, and the pulse soft. The pulse, Dr. M'Bride observes, is less hard than in the pleurisy. Burserius gives a fuller account of the diagnostic symptoms of peripneumony than any other writer I have met with. It is attended, he observes, with such difficulty of breathing, that the patient is in danger of suffocation, which often obliges him to sit as much as possible in the erect posture, the breathing is frequent, the breath very hot, the cough at first dry or attended with a very scanty expectoration, which is frothy, thin, crude, yellow, or mixed with blood; at a more advanced period becoming more considerable, thicker, better concocted, and more easily spit up. The patient complains of a weight, oppression, and distension throughout the whole chest, but there is no pain except such as can hardly be felt, confined chiefly to the region of the sternum and spine, and often only perceived when the chest is strongly agitated by coughing. The cheeks are red and swelled, the eyes prominent, the head pained, the tongue parched, at first yellowish, afterwards covered with viscid mucus, at length black and chopped. These symptoms are accompanied with a great desire for cold drink and fresh air, and a full and sometimes undulating soft pulse. Sometimes, however, he observes, contrary to the assertions of most authors, the pulse is strong and hard; at other times it is irregular and intermitting or very small and quick. The patient lies with more ease on the back than on the sides. The debility is very great. The urine is sometimes pale and clear,

at other times dark-coloured and turbid. Many other accounts of peripneumony nearly in the ſame tenor might be adduced.

There are but two purpoſes which can poſſibly be ſerved by thus ſeparating from the other ſymptoms of pneumonia and calling by a particular appellation the ſymptoms juſt enumerated. It muſt either teach us to aſcertain the ſeat of the diſeaſe with more accuracy, or enable us better to ſuit the modes of practice to the various ſymptoms of pneumonia. Let us conſider how far it anſwers either of theſe purpoſes.

In the firſt place, it may be remarked of the different accounts of peripneumony which have been quoted, that their authors are far from agreeing among themſelves what its diagnoſtic ſymptoms are, and this is a point which muſt remain to be ſettled, although it be found that ſome of the foregoing ſymptoms always indicate an inflammation of the paranchyma of the lungs, and demand a treatment different from that neceſſary in other caſes of pneumonia.

However different the characters of peripneumony given by different writers, they ſeem all to agree that an obtuſe and pretty general pain, or the total abſence of pain with a great degree of dyſpnœa, are its chief characteriſtic marks; and on comparing theſe characters we find, that there is no other ſymptom generally regarded as characteriſtic of peripneumony.

A ſimilar obſervation may be made reſpecting pleuriſy. Were we to examine the different accounts of authors, we ſhould find but very few ſymptoms which all agree in regarding as peculiar to this form of the diſeaſe. Dr. Cullen ſays the cough is moiſt at certain periods of pleuriſy. Wendt ſays it is always dry. The hard pulſe and quick ſhort breathing, ſuppoſed by Hoffman to characteriſe pleuriſy, are mentioned by others as occaſional ſymptoms of peripneumony.

Upon the whole, on perufing what has been written on this fubject, we fhall find, that the acute pain is the only fymptom regarded by all as characteriftic of pleurify.

We are here, therefore, to confider whether the dyfpnœa being great and the pain either dull or abfent indicate that the inflammation is confined to the paranchyma, and the dyfpnœa being lefs urgent but the pain more acute, that it has its feat in the membranes of the lungs.

If the reader will confult the 20th Epiftle of Morgagni de Sedibus et Caufis Morborum, particularly the 9th, 33d, 35th, 39th, 41ft, 43d, 47th, 49th and 62d fections of it, and fome parts of his 21ft Epiftle, he will find, that the fymptoms regarded as peculiar to pleurify have frequently attended the paranchymatous inflammation of the lungs, and that, when the pleura was not at all affected. When we infpect the bodies of thofe who die of inflammation of the lungs, (fays Schroeder*) they alone are fometimes found inflamed, although all the fymptoms of pleurify had been well marked. Petrus Servius opened three hundred people, at Rome, who died with the fymptoms of pleurify, in all of them the lungs were greatly inflamed, the pleura little or not at all. Tiffot met with fimilar cafes, and Diemerbroeck fays, that in two or three cafes in which there had been no acute pain, and where confequently, according to the common opinion, the paranchyma of the lungs alone fhould have been affected, the pleura equally partook of the difeafe. Even Burferius obferves, that diffections are not wanting to prove that inflammation of the pleura has been prefent without any pain. Sydenham feems to go fo far as to believe the paranchyma of the lungs to be very frequently the feat of pleurify. And Juncker, in his Confpectus Pathologiæ, obferves, that pleurify often

* Opusc. Med.

paſſes into peripneumony, by which we may underſtand, that the paranchyma, was found inflamed where the ſymptoms had been thoſe of pleuriſy; for ſuch is the prejudice in favour of this diviſion of pneumonia, that when it has been found that the appearances on diſſection did not correſpond with it, it was ſuppoſed that the one form of the diſeaſe had paſſed into the other; an opinion which ſeems to have been ſanctioned even by Haller. Yet we find in ſome of the oldeſt writers obſervations inconſiſtent with it. Hippocrates ſpeaks of pleuriſy and peripneumony as affections nearly if not altogether the ſame; and Galen obſerves, that the pain in peripneumony is ſometimes acute. I need hardly add that the concluſion from the forgoing obſervations, and many more might be added from authors of equal authority, is, that we cannot, from any of the ſymptoms of pneumonia, determine whether the ſeat of the inflammation is in the ſubſtance of the lungs or the pleura.

It remains to be conſidered whether the foregoing diviſion of pneumonia aſſiſts us in its treatment. We ſhall find, in conſidering the treatment of pneumonia, that it is the ſame whether the ſymptoms be thoſe of peripneumony or pleuriſy; nor does the prognoſis vary, the danger being equal in both forms of the diſeaſe. Of what uſe then is the diviſion in queſtion? May we not ſafely reject it?

There are two other diſeaſes termed peripneumony and pleuriſy, frequently confounded with pneumonia, which, both in their ſymptoms and treatment, differ eſſentially from it as well as from each other, the peripneumonia notha, and baſtard pleuriſy; on the latter I ſhall preſently have occaſion to make ſome obſervations; the former muſt be conſidered more at length.

We ſhall find ſimilar reaſons for rejecting the other varieties of pneumonia. An inflammation of the diaphragm and

that part of the pleura which lines it, has been termed paraphrenitis, and is ſaid by authors to be attended with ſuch ſymptoms as enable us to diſtinguiſh it from other thoracic inflammations. "Paraphrenitis," ſays Huxham, "is attended "with a very acute fever and a violent pain extending from the "lower ribs to the loweſt vertebræ of the back, a ſhort con-"vulſive ſingultuous kind of breathing, a vaſt anxiety and un-"eaſineſs, dry cough, hiccup, and delirium; an exceſſive "pain is particularly felt on every inſpiration, which darts "itſelf from the pit of the ſtomach to the very loins, and "the hypochondrium of the ſide affected is drawn inwards "and upwards under the ribs, while the abdomen is ſcarce "perceptibly moved in reſpiration, but remains fixed and "convulſed as it were by the violence of the pain in attempt-"ing an inſpiration." To theſe ſymptoms many writers add a convulſive laughing, which has been termed riſus ſardonicus, from the name of an herb ſuppoſed to poſſeſs the power of exciting it.

But although delirium, hiccup, the riſus ſardonicus, &c. occaſionally attend inflammation of the diaphragm and its membrane, it has more frequently happened that traces of inflammation have been found in them where theſe ſymptoms had not appeared. Cleghorn confeſſes that, in a caſe which he had miſtaken for common pleuriſy, he found on diſſection traces of inflammation neither in the lungs nor pleura, but in the diaphragm. Morgagni relates two caſes in which the diaphragm was wounded without producing the riſus ſardonicus. This ſymptom has been obſerved in intermitting fever and in the common typhus without inflammation of the diaphragm. Strack mentions many caſes of the latter; and Quarin gives one in which veneſection was performed on the ſuppoſition of the diaphragm being inflamed, which proved fatal.

The ſymptoms which are ſaid to characteriſe an inflamma-

tion of the mediaſtinum are, the pain being acute and felt under the ſternum or between the ſhoulders, and ſhooting through the thorax, accompanied with a cough which produces but a ſmall and difficult expectoration. When the pericardium is inflamed, the pain, it is ſaid, is deep ſeated, the oppreſſion and anxiety are exceſſive, attended with palpitation, and a conſtant inclination to cough. The ſame may be ſaid of theſe caſes as of paraphrenitis; traces of inflammation have been found in the mediaſtinum and pericardium where the foregoing ſymptoms had appeared, but theſe ſymptoms have often appeared when no traces of inflammation could be found in either, and on the other hand they are often inflamed with no other than the uſual ſymptoms of pneumonia. "Certe novimus pericardium ſæpe inflammatum "fuiſſe, ſine aliis præter peripneumoniæ ſignis."*

We ſhould, a priori, expect that the ſymptoms of inflammation of the heart would differ eſſentially from thoſe of the other thoracic viſcera. This, however, is far from being the caſe. Dr. Cullen, indeed, in his noſology, makes carditis a diſtinct genus from pneumonia, but obſerves, at the ſame time, that he agrees with Vogel in believing that the ſymptoms of carditis are almoſt the ſame with thoſe of peripneumony, only in general more ſevere. Linnæus, he obſerves, muſt alſo have been of the ſame opinion, ſince neither carditis nor pericarditis are arranged as diſtinct diſeaſes in his noſology.

Dr. Cullen defines carditis, a fever with pain in the region of the heart, anxiety, dyſpnœa, cough, irregular pulſe, palpitation, and ſyncope. Many caſes might be adduced to ſhew the inſufficiency of any diagnoſtic ſymptoms of carditis.† If an irregular pulſe attends the ſymptoms of pneu-

* Culleni Synopsis Nosol. Method.

† A man of thirty-six years of age, Wendt obſerves, complained

monia, and actual syncope occurs, it is probable that the heart is inflamed, but these symptoms are far from being constant attendants on carditis, and the former very frequently attends other cases of pneumonia.

There is still another affection which, the reader will find, has been regarded as distinct from other forms of pneumonia. It is termed by authors the pleuritis vera, by which is understood an inflammation of the pleura costalis, which does not spread to the pleura of the lungs. That this sometimes occurs is certain, but dissection is the only means of ascertaining its presence.

Such are the circumstances which have induced some of the best writers to regard inflammation of all the thoracic viscera as one disease.

I have not mentioned the erysipelas of the lungs. This term is now little used, and seems never to have had distinct ideas annexed to it. In different authors the reader will find different accounts of what is meant by it; and as for rheumatism of the lungs, a term used by some writers, it is employed very inaccurately to express some one or other of the foregoing affections.

Pneumonia is either simple and idiopathic, idiopathic and complicated with other diseases, or symptomatic.

Pneumonia complicated with typhus is termed peripneu-

of a pain in the left side, with a violent and painful cough; and was obliged on account of the dyspnœa to remain in the erect posture; the cough was moist and much yellow matter was expectorated without relieving the symptoms. Guided by the foregoing definition, should we suppose that in this case the heart was inflamed? On dissection it was found that both the heart and pericardium were inflamed, and pus was found among the muscular fibres of the former.

monia putrida, or maligna; with ſynocha, the peripneumonia ardens, or ſynochus pleuriticus; with catarrh, the pleuritis catarrhalis or lymphatica.*

Of theſe, the firſt alone requires particular notice here, the treatment of the others being readily underſtood if we are acquainted with that of pneumonia, and the diſeaſes on which it ſupervenes. I ſhall, in conſidering this form of the diſeaſe, as well as the ſymptomatic pneumoniæ, make ſuch obſervations on the treatment as ſhall prevent the neceſſity of recurring to them, which will occaſion no embarraſſment to the reader if he is acquainted with what has been ſaid of the treatment of the phlegmaſiæ in general.

Comparatively few authors have treated of the pneumonia putrida; in the accounts which we have of it, there are many obſervations which cannot be reconciled, and the ſubject, upon the whole, is involved in ſome confuſion. The following, as far as I can judge, is a general abſtract of what has been aſcertained reſpecting it.

The pneumonia putrida is of two kinds, idiopathic and ſymptomatic. The latter is moſt generally known; it conſiſts merely in pneumonia ſupervening on the typhus gravior. This is the only putrid pneumonia acknowledged by Dr. Cullen. But it ſeems aſcertained by the obſervations of other writers, that there is an idiopathic putrid pneumonia, a primary inflammation of the lungs, accompanied with ſtrongly marked typhus. And this form of the diſeaſe has been epidemic, while the more common form did not appear. The idiopathic putrid pneumonia, when exquiſitely

* For other combinations of this kind see Dr. Cullen's Synop. Nos. Method.

formed, appears with nearly the ſame ſymptoms as the ſymptomatic, only the inflammation is preſent from the commencement.

It has been obſerved to attack chiefly thoſe of debilitated habits, frequently ſuch as labour under chronic diſeaſes of debility; the ſcurvy for example. Very young and very old people and females, Cappel * obſerves, are moſt ſubject to it. He alſo thinks, that the preſence of tubercles and an ill-formed thorax diſpoſe to it.

The occaſional cauſes of the putrid pneumonia are nearly the ſame as thoſe of the phlegmaſiæ in general, with the addition of contagion, for the contagious nature of this form of the diſeaſe ſeems on all hands admitted. Among its cauſes Cappel enumerates impurities of the primæ viæ, and obſerves, that the common pneumonia may be changed into the putrid by heating or very debilitating medicines.

The uſual treatment of pneumonia is here inadmiſſible. All who were bled, Tiſſot obſerves, died. The general plan of treatment ſeems to be a combination of that of typhus with the local treatment of pneumonia, particular care being taken to clear the primæ viæ. The employment of theſe means, however, requires much attention.

Local blood-letting Cappel thinks injurious; others are of a different opinion, and it is only, perhaps, where the debility is very great that it is inadmiſſible. There are inſtances of bleeding from ſcarification of the ſide in this diſeaſe becoming ſo obſtinate and profuſe as to baffle every attempt to ſtop it till the patient expired. Dry cupping, where the debility is very great, is uſed with more ſafety, and often brings relief.

When the tendency to gangrene and hemorrhagy is great,

* Cappel De Pneumonia Typhode.

blifters are improper. They fometimes occafion gangrenous fores. Cappel advifes the plaifter to be removed as foon as the fkin is inflamed.

Fomentations, cataplafms, volatile linaments, warmth applied in every other way, and watry vapours drawn in with the breath, have been particularly recommended. Thefe are fafer means than blifters, but, in proportion as they are fo, lefs effectual.

With refpect to general means, there is none of equal efficacy with the bark and wine; the former is particularly recommended by Quarin and others. The expectoration is often increafed, fays Quarin, and the patient as it were fnatched from death by the bark, efpecially if the fever, as fometimes happens, fhews a tendency to remit. The bark, however, does harm if given incautiouffly. If the inflammatory fymptoms are confiderable, Cappel obferves, the bark is hurtful.

Wine is of more general ufe. There is no cafe of putrid pneumonia where it may not be employed with advantage. The quantity muft be proportioned to the degree of debility. I have feveral times feen pneumonia complicated with the low fever of this country, and in one inftance had the fatisfaction to fee a cafe of this kind which was fuppofed to be hopelefs, terminate favourably, in confequence of the repeated application of leeches and blifters to the cheft, and the free ufe of wine. The ammonia acetata has been found ufeful when the fkin is very dry. Antimonials given cautiouffly are of fervice when the expectoration is difficult. The feneka is not to be depended on. Cappel recommends camphire in fmall and repeated dofes, but relies more on mufk, which he gave in very large quantity where other means had failed. Mercury he thinks ufeful if given fo as to prevent its occafioning much evacuation. Opium has

been recommended for allaying pain, procuring ſleep, relieving the cough, and ſtopping diarrhœa.

The obſervations made on the diet in typhus are applicable here. It is, however, of ſtill more conſequence to guard againſt every thing that deranges the primæ viæ. This obſervation will be illuſtrated by what I am about to ſay of the ſymptomatic pneumoniæ. It has juſt been obſerved that irritation of theſe paſſages may excite the putrid pneumonia. This is particularly the caſe when it appears as a ſymptomatic affection in typhus.

Whether ſymptomatic or idiopathic, it is often accompanied with the ſymptoms peculiar to bilious pneumonia, which we ſhall preſently have occaſion to conſider. In the putrid pneumonia, therefore, clearing the alimentary canal forms an eſſential part of the treatment. The effect of cathartics, however, is unfavorable, and it ſeems very generally admitted, both on this account and becauſe the chief cauſe of irritation ſeems in moſt inſtances to be lodged in the ſtomach, that emetics are the beſt means of removing it. It appears from the obſervations of ſome, ſays Quarin, that the life of the patient has been ſaved by the operation of an emetic. Emetics, ſays Cappel, are uſeful if the ſtomach be oppreſſed and in other caſes at the commencement, eſpecially if the diſeaſe ariſe from contagion. They are alſo uſeful when the expectoration is copious and viſcid, but we muſt be cautious, he adds, that we do not occaſion purging inſtead of vomiting, which is attended with great danger. Schroeder alſo remarks, that if the emetic in putrid pneumonia occaſions purging inſtead of vomiting, the diſeaſe generally proves fatal. On this account, the former recommends ipecacuanha in preference to other emetics, as it may be given with ſafety in large doſes. Other writers make ſimilar obſervations. When we have ſucceeded in removing the ſymptoms of putrid

pneumonia, it is proper for ſome time to purſue a tonic plan in order to reſtore the ſtrength, and prevent a relapſe.*

It will be neceſſary to conſider at ſome length certain ſpecies of ſymptomatic pneumoniæ. Miſtaking them for the idiopathic diſeaſe has often been attended with fatal conſequences.

The reader will find many ſpecies of ſymptomatic pneumonia mentioned in the 102nd, 105th, and 106th pages of Dr. Cullen's Noſology, and many more in the Inſtitut. Med. Pract. of Burſerius. But thoſe which chiefly demand attention are the pleuritis or pleurodyne verminoſa, or ſtomachalis, as Bianchus† calls it, and the pleuritis biliosa, which Dr. Cullen ſeems to have overlooked. It will alſo be neceſſary to make a few remarks on baſtard pleuriſy.

Any thing which greatly deranges the ſtomach and bowels, often occaſions a pain in ſome part of the ſide, accompanied with more or leſs dyſpnœa; which has ſometimes been miſtaken for pneumonia. The difference is apparent, however, on examining the pulſe, which is natural, or nearly ſo; not to mention that here there is not neceſſarily any cough. But it appears from many obſervations that a certain degree of irritation of the ſtomach and bowels is capable of producing all the ſymptoms of pneumonia.

* For an account of the putrid pneumonia the reader may consult Camerarius de Pleuritide Maligna, in the 2d vol. of Haller's Disput. ad Morb. Hist. et Curat. Pertinent. De Preval, on Vomiting in Putrid Pneumonia, in the same volume. Quarin de Febribus, Huxham's Treatise on Peripneumonia, Schroeder's Treatise De Pleuritidum Partitione, in his Opusc. Med. and a Treatise, De Pneumonia Typhode, by Ludov. Christoph. Guil. Cappel.

† Historia Hepatica of Bianchus.

In the 43d, 44th, and 45th ſections of Morgagni's 21ſt Epiſtle, the reader will find the pleuritis verminoſa treated of at ſome length. He mentions one caſe, in which all the ſymptoms of pleuriſy were well marked, that terminated by a bloody vomiting which brought up a lumbricus. We might in this inſtance attribute the relief obtained rather to the loſs of blood than the expulſion of the worm; but he refers to a paper of Pedratto on the pleuritis verminoſa, where the relief obtained by the expulſion of worms from the ſtomach and inteſtines, particularly from the former, is unequivocally proved.

It there appears, that all who vomited worms or paſſed them by ſtool recovered, while thoſe who did not died. All the common modes of treatment in pneumonia failed, anthelmintics alone were ſucceſsful. The caſes related by Pedratto are the more remarkable, that they did not appear in ſolitary inſtances, but as an epidemic attacking the inhabitants of a whole town and neighbourhood.

While the expulſion of worms from the primæ viæ immediately removes the diſeaſe, it is impoſſible for us to believe that inflammation has exiſted. Fever frequently attends worms, and it does not ſeem difficult to explain how they may occaſion pain in the ſide and dyſpnœa. If it be aſked, ſays De Haen,* in what manner worms occaſion the ſymptoms of pleuriſy without the actual preſence of inflammation in any of the thoracic viſcera, it is not difficult to anſwer the queſtion. Some parts of the inteſtines, he obſerves, riſe as high as the 9th, 8th, 7th, and even the 6th rib. Now if lumbrici, he continues, adhere to theſe parts, biting and tearing them, muſt they not occaſion a pain reſembling that of pleuriſy? Will not the wounded inteſtine be

* Method. Medendi.

pained more acutely when it is preſſed by the diaphragm in a full inſpiration, and if the reſpiration be thus hurt, can we ſuppoſe that there will not be ſome degree of cough? This explanation is very intelligible. There is one circumſtance, however, overlooked by De Haen, which tends to involve the nature of the pleuritis verminoſa in much obſcurity. In thoſe who die of this diſeaſe, the ſame traces of inflammation are found in the thoracic viſcera as in thoſe who die of other forms of pneumonia.

Pedratto found, on examining the thorax of one of his patients, the whole lungs ſwelled on the left ſide, which had been the ſeat of the pain; they were inflamed and of a dark colour, and in the interior part there was a collection of white ichorous matter. The pleura was every where inflamed, livid, and marked with red points. The intercoſtal muſcles partaking of the diſeaſe. Thus it appears that the falſe pleuriſy, ariſing from the affection of the primæ viæ, for we have no reaſon to believe that there is any thoracic inflammation at the commencement of ſuch caſes, is in the progreſs of the diſeaſe changed into a true pleuriſy. If the preſence of worms in the inteſtines is capable of exciting pneumonia, it is not ſurpriſing that they aggravate its ſymptoms, and therefore that all who labour under this diſeaſe die if the offending cauſe is not removed.

The bilious pleuriſy ſeems only to differ from the pleuritis verminoſa in the difference of the irritating cauſe. Here the preſence of bile in the inteſtines produces nearly the ſame effects which that of worms in the former caſe does. It has been obſerved, that the pains in the bilious pleuriſy are wandering, the cough dry and troubleſome, with little and difficult expectoration, the beat of the pulſe quick and frequent, the watching conſtant, the anxiety great. In this caſe, Burſerius obſerves, blood-letting hurries on the

fatal termination, which often happens on the fifth day when it has been employed, but is otherwiſe generally delayed to the 7th, 9th, or 11th. The leſs uſeful blood-letting is in pneumonia, Schroeder obſerves, the more reaſon there is to ſuſpect an accumulation of bile in the ſtomach and inteſtines.

The accounts we have of this ſpecies of pneumonia are leſs diſtinct than thoſe of the pleuritis verminoſa. This ariſes from diſeaſes of different kinds having gone by the name of bilious pleuriſy, for ſome auhors have termed every caſe of pleuriſy bilious in which the ſpitting is thin and yellow. The bilious pleuriſy is beſt characteriſed by the various ſymptoms indicating the preſence of bile in the primæ viæ; the patient having on former occaſions been ſubject to bilious affections, and their cauſes having been applied, aſſiſt the diagnoſis.

The chief ſymptoms denoting the preſence of bile in the ſtomach and inteſtines are a ſenſe of oppreſſion, nauſea, and a bitter taſte, with giddineſs and pain in the head, and an unuſual fetor of the fæces, which are often of a very dark colour. Theſe ſymptoms ſometimes do not appear till after one or two blood-lettings.

We muſt have recourſe to emetics and cooling and mercurial cathartics. When the cauſe of irritation is removed, the pneumonia often ceaſes; even nature, Schroeder obſerves, frequently relieves this diſorder by ſpontaneous vomiting and purging.

" In this month of February, a pleuriſy which had ſome-
" thing uncommon in it was very frequent in Fife, and at
" firſt proved fatal to many. It began with ſhivering, head-
" ache, trembling, and bilious vomiting, which after two
" days were ſucceeded by a pungent pain among the ſhort
" ribs, difficult breathing, and a ſhort cough. The thirſt
" of the ſick was moderate if they were not blooded, but

" when as much blood was taken as the degree of pain " ſeemed to require, the thirſt increaſed, as likewiſe the " ſickneſs of the ſtomach, till they fainted. The pulſe " quickly ſunk on drawing blood, which was browniſh, yel- " lowiſh, or greeniſh, and hardly coagulated. The ſick ſlept " none through the whole courſe of the diſeaſe, which con- " tinued for twenty-five or thirty-two days. When blood- " letting was omitted or uſed very ſparingly, and vomits were " given early and afterwards repeated with refrigerants, lax- " atives, and expectorants, as far as the ſtomach would bear, " the patient generally recovered. Very ſtrong emetics did " not anſwer."*

The reader, however, will find ſome difference of opinion reſpecting the employment of blood-letting in the bilious pleuriſy. Bianchus, regards it as pernicious only at the commencement. From what was ſaid concerning the pleuritis verminoſa, which is applicable to the caſe before us, it is more than probable that the lungs in bilious pleuriſy are not inflamed at an early period, which may account for blood-letting being leſs ſucceſsful then, than when the diſeaſe is farther advanced. It is aſſerted by Cleghorn, reſpecting bilious pleuriſy, that much blood-letting was neceſſary, and that, after trying many remedies, this, with proper means to clear the ſtomach and bowels, was found the only ſucceſsful mode of treatment. The only way in which we can account for ſuch oppoſite opinions is by ſuppoſing ſomething different in the nature of the different epidemics. And, indeed, it muſt happen, that in different epidemics the tendency to inflammation of the lungs, from the ſeaſon of the year, ſtate of the weather, or ſome leſs evident cauſe, will be different; and the greater this tendency, it is evident the ſooner

* Edinburgh Medical Essays, vol. 5.

will the inflammatory ſymptoms ſucceed the bilious, and the more early, we have reaſon to believe, may blood-letting be employed with advantage. It has been obſerved, that the blood in this form of pneumonia, does not ſhew the buffy coat, but it is more than probable that this obſervation does not univerſally apply.

It is remarkable that bilious pleuriſies ſometimes obey the tertian type.† When this happens we can hardly ſuppoſe that real inflammation exiſts. Cappel obſerves, that real pneumonia never, as ſome have ſuppoſed, aſſumes a regular intermitting form.

It is observed above, that we frequently meet with ſchirrus of the liver, pancreas, or ſpleen, in thoſe who die of pneumonia, and more frequently, we have reaſon to believe, than can be aſcribed to chance. May not ſchirrus of theſe parts, particularly that of the liver, by an irritation ſimilar to that which produces the pleuritis verminoſa and bilioſa, ſometimes excite pneumonia? In a large proportion of the diſſections of thoſe who died of pneumonia, given by Morgagni, the liver or ſpleen was found indurated or otherwiſe unhealthy, or ſome of the other abdominal viſcera, particularly the pancreas and ovaria, were diſeaſed. Pneumonia is comparatively rare in young children. Dr. Beardſley, in the Memoirs of the Newhaven Society, however, mentions an inſtance of an infant dying of this diſeaſe, in whom the liver was found to be ſchirrous. I have ſeveral times, indeed, ſeen pneumonia evidently induced by this cauſe; and in one of my patients who died of ſchirrous liver, the lungs adhered to the parietes of the cheſt throughout their whole extent.

The other caſes of ſymptomatic pneumonia require little or no comment. The pleuritis arthritica I ſhall have occaſion

* Bianchus, Historia Hepatica.

to mention when I ſpeak of gout. The pleuritis morbilloſa was noticed in the Chapter on Meaſles; there is nothing particular either in its ſymptoms or mode of treatment. The pleuritis hydrothoracica appears in general with little pain but much dyſpnœa, and is beſt relieved by repeated bliſters applied to the cheſt, and ſmall does of calomel, digitalis, and other diuretics. The pueumonia phthiſica, that inflammation of the lungs which forms the firſt ſtage of phthiſis, has, though with little propriety, been ranked among the ſymptomatic pneumonia. We ſhall ſoon have occaſion to conſider it at length.

The diſeaſe which has been termed the baſtard pleuriſy, is nothing more than an inflammatory affection of the intercoſtal muſcles, producing an acute pain of the ſide, increaſed on inſpiration. It is generally attended with little or no fever and ſcarcely with any cough. An inflammation of the intercoſtal muſcles often ſpreads, as I have myſelf repeatedly witneſſed, to the pleura and lungs, producing a true pleuriſy. Thus we find a caſe related by Huxham, in which ſome of the muſcles of the thorax were wounded, from which, the inflammation ſpreading to the viſcera, the patient ſoon laboured under all the ſymptoms of pneumonia.

But whether baſtard pleuriſy be the ſole diſeaſe, or combined with pneumonia, its preſence may always be detected by the increaſe of pain which takes place on the contraction of the inflamed muſcles. The patient generally complains of ſoreneſs on preſſure in the ſeat of the pain.

The baſtard pleuriſy, for the moſt part, yields to local means, or theſe combined with ſudorifics.

SECT. IV.

Of the Cauſes of Pneumonia.

THE ſtrong and plethoric, who uſe much exerciſe, and readily digeſt their food, are moſt ſubject to pneumonia. The leaſt ſubject to it are thoſe of a relaxed and weakly habit, bad digeſtion, and indolent diſpoſition. It has been an obſervation from the infancy of medicine, that thoſe who complain of acidity of the ſtomach are little ſubject to this diſeaſe. It is moſt common in middle life or rather later, Dr. Cullen ſays between 45 and 60, and in winter and ſpring, particularly the latter. It is generally the more frequent, the colder, moiſter, and more changeable the weather. Huxham ſays he has ſeen the ſame epidemic in low warm ſituations near the ſea prove only a catarrhal fever, in more expoſed ſituations a true pneumonia. According to the obſervations of army phyſicians, however, all extremes of weather, whether very cold, very warm, very dry, or very moiſt, prediſpoſe to this diſeaſe.* As in other phlegmaſiæ every thing which conduces to plethora, full living, indolence, repelled eruptions, ſuppreſſed excretions, even drying up an iſſue or healing an old ſore, may have the ſame effect.

Of the exciting cauſes of pneumonia the ſudden or partial application of cold, eſpecially when the ſkin is damp, is the chief. I have ſeen a fatal caſe of pneumonia from going into a cold bed while the ſkin was damp from exercise.

* See the obſervations of Dr. D. Monro, Sir John Pringle, &c.

Many of the predispoſing cauſes applied ſuddenly and to a great degree act as exciting cauſes.

Such are the cauſes which pneumonia has in common with the other phlegmaſiæ. Thoſe which are peculiar to it act immediately on the lungs; violent exerciſe forcing the blood too rapidly through them, violent coughing, receiving acrid vapours with the breath, other diſeaſes of the thoracic viſcera, aſthma, hydrothorax, calloſity of the pleura, &c. to which we may add, as we have juſt ſeen, certain diſeaſes of the abdominal viſcera.

Adheſions of the pleura are generally ranked among the cauſes of pneumonia. It is only, however, when very extenſive that they ſeem capable of exciting this diſeaſe.

No phlegmaſia is more eaſily renewed in thoſe who have formerly laboured under it. Hoffman ſays he has ſeen the ſame perſon attacked with pneumonia four or five times within a year.

It is frequently epidemic, but never it is obſerved by Morgagni and others who have been moſt converſant with it, contagious, as ſome have ſuppoſed. This obſervation, however, as appears from what was ſaid of the pneumonia putrida, only applies to the common form of the diſeaſe.

SECT. V.

Of the Treatment of Pneumonia.

The treatment of pneumonia, like that of the other phlegmaſiæ, may be divided into general and local.

It differs but little from that of the phlegmaſiæ which have

been conſidered; the chief difference ariſing from the nature and importance of the organ affected. The firſt remedy employed is general blood-letting, which ſhould be carried far enough either to relieve the ſymptoms while the blood flows, or occaſion a tendency to ſyncope.

It is ſuppoſed by many, that bleeding from the arm of the ſide affected is moſt beneficial. Dr. Cullen does not ſeem to think this opinion groundleſs. It may be ſafely aſſerted, however, that letting blood from the ſide affected is not of ſuch importance as to make it neceſſary, when it is more convenient to let it from the other.

Our view in letting blood from the arm is to diminiſh the vis a tergo, and this is done equally well from whatever vein the blood is taken, provided it is of the ſame capacity and equally near the heart.

Werlhoff has even gone ſo far as to aſſert, that in one inſtance he had ſeen the blood drawn from the ſide not affected natural, while at the ſame time blood drawn from the ſide affected ſhewed the buffy coat. Other phyſicians, however, have maintained, that the ſide not affected is that from which blood ſhould be taken in pneumonia. The reader will find an account of the diſputes on this ſubject in Van Swieten's Commentary on Boerhaave's 890th Aphoriſm. In many places they were conducted with great acrimony, and in Portugal an edict was iſſued by Government prohibiting any phyſician from letting blood in pleuriſy from the ſide affected!

It was a cuſtom among ſome of the old practitioners to open the arteries of the hand in this diſeaſe; that which lies between the thumb and forefinger was generally choſen. Dr. Friend * obſerves, that Galen was the firſt who recommended this mode of blood-letting in pneumonia. Gesnerus, in his

* History of Medicine, from the days of Galen to the beginning of the sixteenth century.

Epiſtle to Cratto, and ſome other writers, have maintained, that there is no part of the arm from which it is proper to let blood, and that the patient can only be ſaved by drawing it from the foot. On ſuch obſervations any comment is unneceſſary. When the jugular vein can be readily ſtruck it is of advantage to take the blood from a vein which pours its contents into the thorax. Boerhaave conſiders it of ſo much conſequence that the blood ſhould be drawn off as ſuddenly as poſſibly in this diſeaſe, that he not only adviſes it to be taken from a large orifice, but that the patient ſhould endeavour to quicken its flow by breathing quickly and coughing. The propriety of which may be queſtioned.

There are few caſes of pneumonia which yield to the firſt blood letting. For even where it gives moſt relief the ſymptoms generally ſoon return, and demand a repetition of the remedy.

If it be found, ſays Boerhaave, on repeating the blood-letting that the buffy coat has diſappeared, we are warranted to diſſuade from the further uſe of the lancet. And the reader will find ſimilar obſervations made by others. But Dr. M'Bride has juſtly obſerved, that this is only true when the ſymptoms at the ſame time abate, for in many caſes the buffy coat is never ſeen, and in many, he might have added, it diſappears long before the inflammation yields.

The appearance of the blood, however, is not to be overlooked, the diminution of the buffy coat is always a favourable ſign, and it often happens that there is no occaſion to repeat the blood-letting after it diſappears.

Triller* and ſome other reſpectable writers have adviſed, in repeating the blood-letting in this diſeaſe, to take the blood from different parts of the body. The arm of the

* Trilleri Opusc. Med et Med. Philol.

ſide affected he recommends as the beſt place for the firſt blood-letting, for the ſecond, he conſiders the foot of the ſame ſide the proper place, and for the third, the other foot. Little need be ſaid of this conceit; the reaſons which determine our choice of the vein in the firſt blood-letting are of equal force in repeating the remedy.

It has been ſaid, that blood-letting in pneumonia is improper after the fourth day. It is now very generally admitted that although it is moſt effectual when employed within the firſt three or four days; it muſt be employed, if the ſymptoms are well marked, and the ſtrength will bear it, at any period of the diſeaſe. When the ſymptoms have occaſionally remitted, I have known blood-letting in the ſecond or third week attended with the beſt effects. We muſt be careful not to repeat it after ſuppuration has commenced, which is known by the ſymptoms above pointed out.

The reader will find many ſtating the quantity of blood which muſt upon the whole be loſt in the cure of pleuriſy. In adults, ſays Sydenham, pleuriſy is ſeldom cured with the loſs of leſs than forty ounces of blood. It is evident, however, that no general rule can be laid down. The repetition of the blood-letting, as well as the quantity to be drawn at each blood-letting, muſt be determined by the ſtate of the ſymptoms and the ſtrength of the patient.

It is a favourite opinion, that as ſoon as ſpontaneous evacuations, which may prove critical, take place, all artificial evacuations ſhould be diſcontinued, as tending, it is ſaid, to diſturb the ſalutary efforts of nature.*

When a ſpontaneous evacuation relieves the ſymptoms,

* See the 889th Aphoriſm of Boerhaave, Dr. Millar's Account of the Diſeaſes of Great Britain, &c.

there is no occaſion for blood-letting, and it is proper at all times as much as poſſible to ſave the patient's ſtrength; but when ſuch evacuations bring no relief, or when they do to a certain degree bring relief, but the ſymptoms are ſtill ſuch as warrant blood-letting, their preſence muſt not deter us from it; nor does blood-letting, cautiouſly employed, tend to interrupt a free expectoration or other ſalutary diſcharges, but frequently promotes them.

There is no diſeaſe, however, in which an unguarded uſe of the lancet is not attended with danger; and during ſpontaneous evacuations, which relieve the ſymptoms, in proportion as there is leſs occaſion for profuſe blood-letting, it is the more injudicious. If too much blood is taken away in pleuriſy, ſays Hoffman, the expectoration will be impeded, the obſtruction confirmed, and ſphacelus may enſue. It was obſerved above, that when the diſeaſe has been tedious, and the ſtrength much reduced, the matter poured into the bronchiæ ſometimes accumulates in ſuch quantity as to occaſion ſuffocation. But although the debility induced by blood-letting produces neither ſuffocation nor gangrene, it may prove the cauſe of death by giving riſe to other diſeaſes. In pneumonia it is frequently followed by hydrothorax, ſometimes by aſthma, phthiſis, or any other diſeaſe of debility to which the patient is prediſpoſed.

When a tendency to hemorrhagy appears in pneumonia, it is by many judged better to promote the hemorrhagy than to draw blood from other parts. If bleeding from the noſe, or hæmorrhois occurs, we are adviſed to increaſe the flow of blood by fomentations, and applying leeches, and in the former caſe, by irritating the nares. If, however, the hemorrhagy thus increaſed does not ſoon relieve the ſymptoms, we muſt have recourſe to blood-letting in the uſual way. In

ſevere caſes the hemorrhagy is rarely ſuch as to induce us even to delay veneſection.

Some difference of opinion has ariſen concerning the employment of cathartics in pneumonia; ſome uſe them for the purpoſe of increaſing the effects of blood-letting. There is the ſame objection, however, to this practice in pneumonia as in the caſes which have been conſidered, with this in addition, that a ſpontaneous diarrhœa is generally hurtful in this diſeaſe. It is true, indeed, that in the caſe of ſpontaneous diarrhœa, the injury may proceed rather from the irritating matter which occaſions it, than from the diarrhœa itſelf. Experience, however, ſeems not to warrant a freer employment of cathartics in pneumonia, than is neceſſary to ſupport a due action of the bowels.

Except in caſes immediately connected with the ſtate of the ſtomach, emetics are very generally regarded as hurtful in pneumonia; but nauſeating doſes, particularly antimonials, are the moſt valuable of all medicines in this diſeaſe, tending more than any other to promote expectoration and relax the ſkin.

The advantage derived from ſpontaneous ſweating has induced many to recommend more powerful ſudorifics, but theſe have not anſwered the expectations formed of them. I have already had occaſion to obſerve, that the effects of ſpontaneous ſweating ſeldom attends that produced by art. It ſometimes happens that even ſpontaneous ſweating, particularly when it is partial and clammy, ſerves no other purpoſe but that of reducing the ſtrength. It muſt then be cautiouſly checked, by diminiſhing the allowance of fluid and removing part of the bed-clothes.

In like manner the advantage derived from a free expectoration has led to the uſe of the various medicines termed expectorants. Few of them, however, are well adapted to this diſeaſe. The gums and even ſquills, by their irritation

increaſe the febrile ſymptoms, and render the cough tighter. When the inflammation is nearly ſubdued, however, and the bronchiæ are clogged with a viſcid ſecretion, they are often, particularly ſquills, of great ſervice, promoting expectoration, and relieving both the cough and ſenſe of oppreſſion. The ammonia alſo is ſometimes ſerviceable in promoting expectoration towards the decline of the diſeaſe. But while the inflammation laſts, if we except nauſeating doſes of emetics, we find no expectorants ſo uſeful as mucilaginous mixtures, and watery vapour received into the lungs.

It was once a prevalent opinion, that the advantage derived from mucilaginous medicines ariſes from their being received into the maſs of blood and conveyed to the lungs, where, it was ſuppoſed, they render the matter about to be expectorated of a proper conſiſtence. This hypotheſis led to forcing the patient to take large quantities of them, which, by oppreſſing the ſtomach, often did more harm than good. It is now pretty generally admitted, that a principal effect of theſe medicines is that of beſmearing the fauces, thus allaying the irritation which keeps up the cough, and prevents the matter poured into the lungs from remaining there till it has acquired a due conſiſtence,* without which it cannot be freely expectorated. To anſwer this purpoſe they ſhould be given frequently. They ſeem alſo to be of ſervice in lining the ſtomach and bowels, and thus preventing irritation. As might be expected from this view of them, they are found moſt ſerviceable when the expectoration is too thin. When this is the caſe, opiates, if the ſtate of the inflammatory ſymptoms admits of their uſe, are the moſt

* It seems to be a law of the animal œconomy, that while secreted fluids remain in any of the cavities, the absorbents are constantly employed in taking up the thinner parts.

powerful expectorants. Their operation is ſimilar to that of the foregoing, but as they act by leſſening the ſenſibility, their effects are more certain.

There is ſome difference of opinion reſpecting their employment in pneumonia, whether for the purpoſe juſt mentioned, or that of allaying pain. It appears from the obſervations of foreign writers, that on the Continent they are frequently employed with the latter intention. In young people, ſays Hoffman, ſmall doſes of opium combined with nitre and diaphoretics may be given for the purpoſe of allaying pain, but in advanced life, where the juices are thick, they render the expectoration more difficult.

The practitioners of this country almoſt wholly confine the uſe of opium to the latter ſtages. When the difficulty of breathing and fever have abated, the cough remaining, with more or leſs pain and watchfulneſs, gentle opiates are employed with ſafety and often with great advantage.

Watery vapour is chiefly uſeful when the expectorated matter is viſcid and tenacious. The vapour has been impregnated with a variety of articles, onions, which are among the beſt, a variety of herbs, honey, &c. Vinegar has been particularly recommended. Dr. M'Bride adviſes a large ſpunge dipt in vinegar to be held cloſe to the mouth and noſtrils.

It is needleſs here to repeat what has been ſaid of the uſe of ſaline medicines, particularly the ſaline draughts and nitrate of potaſh, which are always uſeful when the heat is much increaſed.

All agree reſpecting the beſt regimen in pneumonia; it ſhould be ſtrictly anti-inflammatory. All kinds of animal food and heating fluids muſt be avoided, and the diet ſhould conſiſt of light vegetables with much dilution. The temperature of the patient's room ſhould neither be ſo high as to

increaſe the rapidity of the circulation, nor ſo low as to run the riſk of increaſing the inflammatory affection of the lungs, which a very cold air is found to do. A temperature of about 60° is the beſt, and it is of conſequence that it ſhould be kept as uniform as poſſible. It is hardly neceſſary to obſerve that all kinds of exerciſe ſhould be avoided. Some, indeed, have adviſed the patient to be as much out of bed as he can eaſily bear. In this practice, however, there is much riſk, and little advantage is to be expected from it.

The reader will perceive that, if we except the means for allaying the cough, increaſing the expectoration, and clearing the primæ viæ, there is but one view in the general means employed in pneumonia, namely, to diminiſh the vis a tergo. It appears from what was ſaid above, that certain medicines poſſeſs this power independently of any evacuation. The digitalis is the only one of this claſs which has obtained much attention. In the trials I have made with it in the phlegmaſiæ, I have generally been diſappointed in its effects. Although we ſucceed by it in leſſening the force of the circulation, we often find the inflammatory ſymptoms but little relieved. This may be readily accounted for by what has been ſaid of the nature of inflammation, for if inflammation ariſes from the power of the capillaries bearing too ſmall a proportion to the vis a tergo, it is evident that a means which equally impairs the action of all the veſſels, will not ſucceed in reſtoring the due balance between them. We have reaſon to believe that the digitalis is a means of this kind, that it does not act by impairing the vigour of the heart and larger veſſels alone, but equally of every part of the ſanguiferous ſyſtem.

It is more than probable that leſſening the proportion of

oxygen in the air would be a powerful means of relief in pneumonia.

The moſt important of the local remedies employed in pneumonia are local blood-letting and bliſters. The former is the chief reſource when the patient's ſtrength is ſo far reduced that he can no longer bear general blood-letting, and it is chiefly under ſuch circumſtances that it has been employed. But it would appear, from the obſervations made on the treatment of the phlegmaſiæ, that the purpoſes ſerved by general and local blood-letting are not the ſame; that the one is better calculated to relieve the local congeſtion, the other to diminiſh the vis a tergo; from which it is evident, that wherever the ſymptoms are conſiderable advantage will ariſe from combining theſe modes of blood-letting. Relief will be more ſpeedily obtained, and the extent to which it will be neceſſary to carry the general blood-letting will be leſſened.

In all the phlegmaſiæ, we have ſeen, when the fever is conſiderable the uſe of bliſters muſt be delayed till the ſymptoms are mitigated by proper evacuations. This precaution is moſt neceſſary in thoſe phlegmaſiæ in which the pulſe, as in pneumonia, is moſt uniformly ſtrong and hard. The period proper for the application of bliſters muſt vary therefore according to the effects of blood-letting. It is proper before their application that the hardneſs of the pulſe ſhould be conſiderably leſſened.

The bliſter ſhould be pretty large and applied immediately over the ſeat of the pain, or if there is no pain on the anterior part of the thorax. If the ſymptoms do not readily yield, it is proper to ſupport the diſcharge from the bliſtered part, or to apply a ſucceſſion of bliſters, which is preferable. It is neceſſary to apply them to ſome part of the thorax, little

or no advantage arifing from their application to more diftant parts.

Fomentation of the pained fide is a very ancient practice, and was recommended by Hippocrates before blood-letting. At prefent, however, it is little relied on, the benefit derived from it feldom compenfating for the trouble it occafions. It is ftill recommended by fome foreign writers. In baftard pleurify, which is nothing more, we have feen, than an inflammatory affection of the intercoftal mufcles, the relief derived from fomentations is very confiderable, and this has probably contributed to their being employed in pneumonia.

As the pain in pneumonia is often aggravated by the motion of the ribs, it is recommended by Boerhaave and others to wrap a roller round the thorax, by which confiderable relief is fometimes obtained.

A very few obfervations refpecting the means to be employed when any of the unfavourable terminations of pneumonia have taken place, will be fufficient, for little can be done. If the patient recovers after an abfcefs is formed in any part of the lungs, he owes his fafety more to the accidental feat and fize of the abfcefs, and the favourable ftate of the habit, than to any means we poffefs.

If the abfcefs evidently points outwards, I have already had occafion to mention the propriety of opening it. When it burfts into the fubftance of the lungs, if it is not large enough to occafion fuffocation, it fometimes, in very favourable habits, takes on the healing procefs, the purulent expectoration ceafes, and the patient is foon reftored to health. In by far the majority of cafes, however, the abfcefs continues to form matter and hectic fever comes on, it then conftitutes the laft ftage of phthifis pulmonalis, a difeafe we fhall have occafion to confider at length; and medicine is

of little avail. Nor can it do more where the abſceſs has burſt into the cavity of the thorax forming the empyema; in this caſe, indeed, it has been propoſed, that the matter ſhould be evacuated,* as in the caſe of abſceſs pointing externally, but here the operation promiſes but little, nor, as far as I know, has it ever been ſucceſsful.

It ſometimes happens, we have ſeen, that cloſed abſceſſes of the lungs remain for a long time without materially impairing the health. It is only neceſſary in ſuch caſes that the patient ſhould avoid with care all cauſes which may renew the inflammation.

Gangrene of the lungs is uniformly hopeleſs. It is probable, indeed, that although we had means of checking the gangrene, the hemorrhagy which conſtantly attends it in this organ would always prove fatal. Plans of cure, however, have been propoſed. Boerhaave, in his 902d and 903d Aphoriſms, lays down what appears to him the moſt probable. They are evidently dictated by hypotheſis, and their being generally abandoned is a ſufficient proof of their inefficacy. Neither Boerhaave, nor his commentator indeed, give a ſingle caſe in which they were put in practice. Can it be ſuppoſed that the application of the actual cautery to the ſide can be of any avail when gangrene of the lungs has taken place? And Van Swieten, in adducing the authority of Aretæus in favour of the practice, ſeems to have fallen into an error, for it does not appear that it was recommended by him as a means of checking gangrene, but leſſening the inflammation, with which view it might certainly be of uſe; nor is the ſuggeſtion of Dr. Millar at all more likely to be of ſervice. "When in pneumonia, gangrene has taken "place," he obſerves, "little can be expected from medi-"cine. If any thing can ſave the patient it is a liberal uſe

* Boerhaav. Aphor. Aph. 896.

" of the peruvian bark." He forgets that there is not even time for the trial.

It is obſerved above, that pneumonia has ſometimes, though rarely, terminated in a callus or ſchirrus of the lungs. This termination is leſs unfavourable than the foregoing. It is, however, extremely obſtinate, and generally continues to haraſs the patient for the remainder of life. Medicine ſeems to have little effect; by a mild diet and regular exerciſe the ſymptoms may often be mitigated.

When pneumonia terminates in hemorrhagy of the lungs, if there is time for the uſe of medicine, the mode of treatment is the ſame as in other caſes of hæmoptyſis.

It ſometimes happens that pneumonia leaves the patient ſo much debilitated that he has not ſufficient ſtrength to cough up the phlegm which attends the reſolution of the inflammation, and even ſuffocation has enſued. Here we muſt have recourſe to bliſters and the more ſtimulating expectorants, the fetid gums, ſquills, and ammonia.

CHAP. XI.

Of Peripneumonia Notha.

Dr. Cullen in his Syſtem of Noſology, regards this diſeaſe merely as a variety of pneumonia, and it cannot be doubted that it often is nothing more than inflammation of the lungs conſiderably modified by peculiarity of habit. Sometimes, however, it has much leſs of the appearance of pneu-

monia, and upon the whole differs from it ſo materially that notwithſtanding what Dr. Cullen ſays of it in the above work, he found it neceſſary in his Firſt Lines to treat of it ſeparately.

In laying before the reader the ſymptoms of peripneumonia notha, I ſhall give a view of the diſeaſe as it appears when it differs moſt from pneumonia, and then point out in what manner it inſenſibly aſſumes more of the appearance of this diſeaſe, till it is difficult to ſay by which name it ſhould be called.

SECT. I.

Of the Symptoms of Peripneumonia Notha.

THE peripneumonia notha often makes its attack with ſymptoms ſo ſimilar to thoſe of a common catarrh, that it is hardly to be diſtinguiſhed from it. In other caſes it comes on with languor, reſtleſſneſs, ſome degree of cold ſhivering, or chills alternating with fits of heat, without being accompanied with catarrhal ſymptoms.

As the diſeaſe advances, which is generally without much fever, the patient complains of dyſpnœa, much anxiety, and a ſenſe of oppreſſion and tightneſs about the precordia. A cough generally comes on at an early period, attended with an expectoration of a white viſcid frothy matter, which is rarely tinged with blood.

The cough often becomes very violent, attended by a headach, in many caſes very ſevere, and generally much aggravated

during coughing, giving a ſenſation, to uſe Sydenham's expreſſion, as if the head were torn to pieces. This ſymptom is peculiarly characteriſtic of the diſeaſe.

Vomiting is frequent at an early period, eſpecially when the cough is violent, by which it is often excited. The matter thrown up, as in ſimple fever, generally conſiſts of a viſcid inſipid mucus. Sometimes there is no cough. In this circumſtance, and the occaſional violence of the cough as well as the head-ach, and vomiting, it differs eſſentially from the true pneumonia. It chiefly differs from it, however, in the febrile ſymptoms, being generally mild and often wholly abſent, the pulſe at no period being more frequent than natural, except when hurried by the cough, the tongue remaining moiſt, and the functions in general ſeeming but little deranged. The urine, however, is generally high-coloured and turbid, and even where there is no fever, the blood frequently ſhews the buffy coat.

The functions of the mind are in general but little diſturbed. A conſiderable degree of vertigo, however, frequently attends, accompanied with much fluſhing of the face, and ſometimes drowſineſs approaching to coma. There is often no pain in the thorax, or it is ſo trifling that the patient never complains of it; he ſometimes deſcribes it as an obſcure dull pain which is rather troubleſome than ſevere.

There are few diſeaſes in which the prognoſis is more difficult than in the peripneumonia notha, for when we ſee little appearance of danger a ſudden exacerbation often takes place and proves fatal.* And this now and then happens at the very time when a conſiderable abatement of the ſymptoms has afforded hopes of recovery.

* See the observations of Boerhaave, Cullen, and Lieutaud, and the 11th and other sections of the 21st Epistle of Morgagni de Causis et Sedibus Morborum.

In moſt caſes, however, death is preceded by a more ſevere train of ſymptoms. The dyſpnœa increaſes, a degree of coma ſupervenes, the face becomes hippocratic, the nails livid, and the voice hoarſe and inarticulate, the patient complaining of great anxiety and a ſenſe of oppreſſion; the limbs at length become cold and the vital powers gradually ſink.

When the peripneumonia notha terminates favourably, it is ſtill more generally attended, than the true pueumonia, by a copious and free expectoration; and if there be any thing which affords a juſt prognoſis, it is the ſtate of this ſymptom. The greater the debility, the more oppreſſed the lungs, and the leſs free and copious the expectoration, the worſe is the prognoſis.

On reviewing the foregoing account of the peripneumonia notha, the reader will readily perceive how eaſily it may aſſume the form of the true pneumonia. If a cough attend the peripneumonia notha, which is neither violent nor attended with vomiting, and the febrile ſymptoms run higher than uſual, it is not poſſible to diſtinguiſh it from this diſeaſe, or rather it muſt be regarded as a caſe of true pneumonia, and on diſſection it will be found that the lungs are actually inflamed. Diſſection, indeed, has very frequently detected inflammation when the ſymptoms were thoſe of well-formed peripneumonia notha, as appears from caſes related by Morgagni and others. In many inſtances, however, no traces of inflammation can be found, and the diſeaſe ſeems almoſt as much allied to catarrh as to pneumonia, and runs into it by degrees equally imperceptible. The ancients, indeed, ſeem to have confounded it with catarrh.*

* Eller de Cog. et Cur. Morb.

SECT. II.

Of the Causes of Peripneumonia Notha.

This is one of the diseases which has been accurately described only in later times. "A disease under this name," Dr. Cullen observes, "is mentioned in some medical writ-"ings of the sixteenth century, but it is very doubtful if the "name was then applied to the same disease to which we "now apply it. It appears to me, that unless some of "the cases described under the title of catarrhus suffocativus "be supposed to be of the kind that I am now to treat "of, there was no description of this disease given before "that by Sydenham, under the title I have employed here." In the following paragraphs, he observes, that, after Sydenham, Boerhaave is the first author who in a system noticed it as a distinct disease, and that, notwithstanding the remarks of Lieutaud, who with confidence affirms that the diseases described by Sydenham and Boerhaave under the title of peripneumonia notha are different, he is of opinion, that not only the disease described by Sydenham and that described by Boerhaave are the same, but that, that described by Lieutaud himself is not essentially different from them. And nobody, I think, who compares the accounts of this disease given by the foregoing writers, and distinguishes the accidental from the essential symptoms, can hesitate to agree with Dr. Cullen.

The peripneumonia notha is most apt to attack those advanced in life. Women and others of a delicate habit are

leſs ſubject to it than the robuſt. It is common in the full and phlegmatic, eſpecially thoſe who have indulged much in the uſe of fermented liquors, particularly diſtilled ſpirits, or have fallen into a bad habit of body from other cauſes. Thoſe who have been ſubject to catarrhal affections, who are indolent, Quarin obſerves, and whoſe diet is too nutricious, are particularly ſubject to peripneumonia notha, and may be attacked with it at an earlier time of life than that at which it uſually appears. Like the true pneumonia, it ſeems often connected with the ſtate of the liver, which is probably one reaſon why thoſe addicted to the uſe of fermented liquors are ſubject to it.

The exciting cauſes of peripneumonia notha are ſimilar to thoſe of the phlegmaſiæ. It is moſt prevalent in marſhy countries, eſpecially when the air is cold or liable to ſudden changes of temperature; hence ſpring and autumn are the ſeaſons at which it chiefly prevails, and it is equally occaſioned by a change from heat to cold, or the contrary.

It is frequent during the prevalence of contagious catarrhs, which in the prediſpoſed frequently terminate in peripneumonia notha; and may be excited by the various irritations of the lungs, which were mentioned as occaſional cauſes of pneumonia.

Some remarks on the nature of peripneumonia notha, which, from what has juſt been ſaid, ſeems to differ ſo eſſentially from the phlegmaſiæ, may be judged proper. Its nature, however, ſeems at preſent but ill aſcertained. We appear, indeed, to claſs under this name diſeaſes of very different natures; or I would rather ſay, that the diſeaſe, which goes by this name, comprehends all the various gradations, by which pneumonia and catarrh inſenſibly run into each other.

It is not difficult to conceive that a ſecretion into the bronchiæ may take place capable of impeding or even interrupting the office of the lungs, without inflammation. But ſuch caſes ſhould be diſtinguiſhed from the effects of inflammation? Dr. Cullen, and ſome others, indeed, maintain, that a degree of inflammation conſtantly attends this diſeaſe, while others run into the oppoſite opinion, and deny that it ever is of an inflammatory nature. When the peripneumonia notha is exquiſitely formed, the inflammation is certainly of a very languid kind.

The chief difference between the true pneumonia and the peripneumonia notha ariſes, perhaps, from the greater laxity of fibre in thoſe who are ſubject to the latter, in conſequence of which the effuſion being copious either wholly removes the incipient inflammation or prevents its becoming conſiderable. If ſuch be the caſe, it would appear from what was ſaid in the Introduction to the Second Part reſpecting the na- of the profluvia, that the peripneumonia notha belongs rather to this order of diſeaſes, than to the phlegmaſiæ.

SECT. III.

Of the Treatment of Peripneumonia Notha.

The treatment of this diſeaſe varies in different caſes according as the ſymptoms approach more or leſs to thoſe of the true pneumonia. When the inflammatory ſymptoms are conſiderable, the treatment of the two diſeaſes differs chiefly in degree.

From the tendency to effusion, however, in all cases of peripneumonia notha, and the peculiar habit of body in which it appears, blood-letting must be employed with great caution. It is sometimes proper, indeed, to begin with a moderate blood-letting, but after the inflammatory symptoms have to a certain degree yielded, it is advisable to attempt the cure by an attention to diet, proper expectorants, and local evacuations alone. There are few diseases whose treatment is more perplexing, the inflammatory symptoms often indicating one set of means, while the tendency to effusion points out another of very opposite effects. We must study with care the nature of the symptoms and the habit of body, and obviate that tendency which seems most to threaten danger, but in such a way as shall tend as little as possible to increase the opposite train of symptoms.

Boerhaave, in one passage recommends blood-letting, and in another dissuades from it, as, even while it brings immediate relief, eventually increasing the disease; and Sydenham, who in most cases made so liberal a use of the lancet, acknowledges the bad effects of the repetition of blood-letting in peripneumonia notha.

Catharsis is a safer evacuation. Dr. Cullen thinks the little advantage derived from it in the true pneumonia a strong argument against it here. Sydenham, on the other hand, assures us that, contrary to what happens in the former disease, the free employment of cathartics is useful in peripneumonia notha. The result of general experience, however, seems to be, that mild cathartics, not too frequently repeated, and clysters* only, are proper; for, although it is of great consequence to prevent irritation of the primæ viæ, much evacuation by the bowels seems to be hurtful.

* Eller De Cog. et Cur. Morb.

Reaſoning from the practice in true pneumonia, we ſhould be led to very erroneous concluſions reſpecting the propriety of emetics in this diſeaſe. In peripneumonia notha, ſays Lieutaud, eſpecially if it be accompanied with nauſea, an emetic often brings immediate relief. "Full vomiting," Dr. Cullen obſerves, "may often be repeated, and nauſeating "doſes ought to be conſtantly employed." The benefit derived from emetics and nauſeating doſes ſeems chiefly to conſiſt in their increaſing the expectoration, on the ſtate of which, we have ſeen, the event of the diſeaſe generally depends. Nor is their tendency to promote ſweat, which, if general and not profuſe nor brought out by heating meaſures, is for the moſt part favourable, to be overlooked.

The more ſtimulating expectorants are better adapted to this diſeaſe than to the true pneumonia. Opiates muſt be employed with great caution. They act, we have ſeen, by interrupting for a time the efforts to expectorate, which, when the ſecretion is copious and the ſtrength much reduced, has often proved fatal.

Little is to be expected from the medicines termed pectoralia, which were once much recommended in peripneumonia notha, ground ivy, hyſſop, &c. When the urine is ſcanty, diuretics are often ſerviceable. They are much recommended by Lieutaud and other writers of authority; and ſome of the milder kinds ſhould always, perhaps, form part of the treatment, when the effuſion is ſuch as to oppreſs the lungs.

With regard to the means of obviating debility, wine is found to increaſe the inflammatory tendency leſs than the bark, and it is often the more neceſſary in this diſeaſe, as the ſubjects of it are frequently ſuch as have been accuſtomed to the free uſe of fermented liquors. Sydenham has juſtly obſerved, that the ſudden abſtraction of the habitual ſtimulus is

often in this diſeaſe attended with the worſt effects. When the inflammatory tendency is great, however, both fermented liquors and tonic medicines are inadmiſſible. As the fever then runs higher and the diſeaſe is more rapid, the change of diet is leſs felt than in the more chronic caſes. Irritating articles of food, and ſuch as are of difficult digeſtion, are improper in all caſes.

Such are the general means employed in peripneumonia notha. The local remedies hold a higher place than in the treatment of true pneumonia.

In the more inflammatory caſes, as we dread the effects of general, we endeavour to ſupply their place by a more aſſiduous uſe of local evacuants. Of theſe, local blood-letting and bliſters are ſtill the chief. The latter are uſeful in all caſes. As in true pneumonia, they ſhould be confined to the thorax. Bliſtering the legs, recommended by Eller and others, appears to be of comparatively little uſe. Fomentations of the cheſt are ſtill leſs uſeful here than in pneumonia.

CHAP. XII.

Of CARDITIS *and* PERICARDITIS.

ENOUGH has already been ſaid of carditis and pericarditis to convince the reader that any particular conſideration of them is unneceſſary. Were we poſſeſſed of a diagnoſis between them and inflammation of the lungs, it would prove of little uſe, the treatment in all being the ſame.

It is remarkable, that inflammation of the heart and pericardium ſometimes exiſts without betraying itſelf by any ſymptom. Abſceſſes and ulcerations of theſe parts have been found after death where none of the uſual ſymptoms of inflammation * had appeared. Why inflammation ſometimes exiſts in theſe organs, unaccompanied by its uſual ſymptoms, it is impoſſible to ſay. In conſidering the other phlegmaſiæ, we ſhall find ſimilar caſes in which the inflammation exiſted in organs of greater ſenſibility than the heart and pericardium.

Having conſidered all the phlegmaſiæ in which the inflammation is ſeated in the head, neck, and thoracic viſcera; we are now to conſider thoſe in which it attacks the abdominal viſcera.

The inflammation ſometimes ſeizes on the whole of the peritoneum; the phlegmaſia is then termed peritonitis.

It is defined by Dr. Cullen,

Fever, with pain of the abdomen, increaſed by the erect poſture, and unaccompanied by the ſymptoms peculiar to the other abdominal phlegmaſiæ.

The peritonitis, however, ſeldom exiſts without the inflammation's ſpreading in a greater or leſs degree to the ſtomach and inteſtines, nor does inflammation of the latter often exiſt without extending to the peritoneum. There is hardly room, therefore, for regarding the peritonitis as a diſtinct diſeaſe. When it does appear as ſuch, it may eaſily be known by comparing the ſymptoms juſt enumerated with what is about to be ſaid of thoſe of the other abdominal phlegmaſiæ, and the mode of treatment is the ſame as in inflammation of the ſtomach and bowels.

* See the Diſſections of Bonnetus Morgagni, and others.

CHAP. XIII.

Of GASTRITIS.

INFLAMMATION of the ſtomach is defined by Dr. Cullen, "Pyrexia typhodes; anxietas; in epigaſtrio ardor et "dolor, ingeſtis quibuſlibet auctus; vomendi cupiditas, et in-"geſta protinus rejecta; ſingultus."

There may be ſome objection to the firſt part of this definition, the fever in gaſtritis bearing little reſemblance to typhus, except in the general debility which attends it; for even the pulſe, if we except its feebleneſs, is very different from that of typhus, and the more marked ſymptoms of typhus hardly ever ſhew themſelves. This objection is obviated by the change above propoſed in the definition of the phlegmaſiæ.*

Dr. Cullen divides gaſtritis into two varieties, the gaſtritis phlegmonodea and gaſtritis erythematica. Of this diviſion I ſhall preſently have occaſion to ſpeak more particularly.

* General Introduction. vol. 1. p. 34, & seq.

SECT. I.

Of the Symptoms of Gaſtritis.

The ſymptoms of gaſtritis, like thoſe of moſt other phlegmaſiæ, are far from being complicated, the definition juſt given comprehending the chief part of them. The pain of the ſtomach is extremely acute, and accompanied with a ſenſe of burning heat. It is not always confined exactly to the region of this organ, but extends as low as the falſe ribs, and often ſhoots to the back. It is generally much increaſed by receiving any thing into the ſtomach, and always by even the ſlighteſt external preſſure. The vomiting is a more conſtant ſymptom than the hiccup.

The pulſe is frequent, ſmall, contracted, more or leſs hard, and ſometimes intermitting. Burſerius obſerves, that it is ſometimes rather ſtrong; but this is rare. The thirſt is urgent, and on receiving a mild fluid into the ſtomach the pain often ſeems for a few moments to abate. The fluid, however, is ſoon rejected, and the patient finds any relief obtained by drinking deceitful and tranſitory.

The depreſſion of ſtrength in gaſtritis is more ſudden and general than in any other of the phlegmaſiæ. Actual ſyncope ſometimes occurs, and the patient complains of anxiety and anguiſh referred to the præcordia.

The bowels are coſtive, though not obſtinately ſo, unleſs the inflammation has ſpread to them; but the conſtant vomiting often oppoſes an obſtacle to moving them.

Gaſtritis cannot eaſily be miſtaken for other pains of the ſtomach. In ſpaſms and flatulent pains, the pulſe is generally natural or nearly ſo, nor are they accompanied with the ſudden ſinking of ſtrength which attends gaſtritis. In them there is often no vomiting, and it is very rarely ſo conſtant, or ſo conſtantly excited by ingeſta. Hiccup alſo is a leſs conſtant ſymptom. The increaſe of pain on receiving any thing into the ſtomach is much leſs remarkable; nor is there any increaſe of pain on preſſure, one of the beſt diagnoſtics of gaſtritis.

In ſpaſm of the ſtomach, the caſe moſt liable to be miſtaken for gaſtritis, there is ſuch a ſenſe of contraction and ſuffocation that the voice is often ſuppreſſed, while in the latter it is more free, and the cries of the patient are often piercing.

According to Sauvages, (and Quarin ſeems to agree with him) it is almoſt impoſſible to diſtinguiſh gaſtritis from an inflammation of the epigaſtric muſcles, in which, it is ſaid, all the ſymptoms of the former are preſent in a leſs degree. The pain, as in gaſtritis, indeed, is increaſed on preſſure; but it is alſo increaſed, and in a greater degree, by the motions in which the epigaſtric muſcles are called into action, which is not the caſe in gaſtritis. The ſtate of the pulſe in the former alſo is very different.* If affected at all, inſtead of being ſmall and feeble, as in gaſtritis, it is ſtrong, as in moſt other phlegmaſiæ. Beſides, there is little or no tendency to vomiting in this caſe, and ſome degree of ſwelling of the muſcles may frequently be obſerved; this ſymptom, however, is not conſtant, and there is often ſome fulneſs about the ſtomach in gaſtritis.

Quarin obſerves, of the inflammation of the epigaſtric

* See the chapter on Rheumatism.

muſcles, that a diagnoſis between it and gaſtritis is of little conſequence, ſince the practice in them is the ſame. This remark, however, is far from being well founded. The greater importance of the organ affected in gaſtritis renders the moſt powerful means neceſſary. In the other we truſt more to local means and ſuch as promote perſpiration, Both in its nature and treatment it reſembles the falſe pleuriſy.

Such are the uſual ſymptoms of gaſtritis, and the means of diſtinguiſhing it from other diſeaſes. There are inſtances on record, in which it appeared on diſſection, that inflammation of the ſtomach had exiſted where few or none of the foregoing ſymptoms had appeared. De Haen, in his Ratio Medendi, relates ſeveral caſes of this kind; in one of which there was no vomiting, and the patient retained his appetite to the laſt; in another, not only the vomiting, but the pain itſelf was abſent. In certain epidemic fevers, the ſtomach has often been found inflamed without the uſual ſymptoms. I have had occaſion to allude to ſeveral epidemics of this kind; and I have myſelf ſeen caſes (aſcertained by diſſection) of ſymptomatic inflammation, both of the ſtomach and bowels without any of the uſual ſymptoms.

Sometimes gaſtritis is attended with more than the uſual ſymptoms. The patient now and then complains of a difficulty of breathing, which does not ariſe from the inflammation having ſpread to the lungs, (when this happens, the other ſymptoms of pneumonia at the ſame time attend) but from the inflammatory ſtate of the ſtomach rendering the deſcent of the diaphragm painful. It is evident the degree of dyſpnœa attending gaſtritis muſt in a great meaſure depend on the part of the ſtomach occupied by the inflammation. The nearer its ſeat is to the diaphragm, the more, it is evident, will the deſcent of the latter affect it.

Another ſymptom, leſs readily accounted for, has,

though rarely, attended gaſtritis, the hydrophobia. The reader will find a caſe of gaſtritis attended by this ſymptom in the firſt volume of the Medical Eſſays. He may alſo conſult Van Swieten's Commentary on the 1130th and 1139th Aphoriſms of Boerhaave. Hydrophobia, indeed, occaſionally ſupervenes in various acute diſeaſes. General convulſions are alſo enumerated by Quarin, Burſerius, and others, among the ſymptoms of gaſtritis. Theſe probably ariſe more frequently from the irritations of the primæ viæ which ſometimes produce gaſtritis, than from the diſeaſe itſelf.

I have already obſerved, that Dr. Cullen divides gaſtritis into two ſpecies, the phlegmonic and erythematic. He is far, however, from defining accurately theſe terms, or pointing out the means by which his ſpecies may be diſtinguiſhed. He ſeems to ſuppoſe that two kinds of inflammation, analogous to the puſtule and erythema of the ſkin, may exiſt in the ſtomach. The one ſuperficial, the other deep-ſeated. This ſuppoſition, we have reaſon to believe, is well-founded, although more accurate knowledge than we poſſeſs is neceſſary for diſtinguiſhing them. It is the gaſtritis erythematica, which, according to Dr. Cullen, may exiſt without the ſymptoms which characteriſe gaſtritis. Erythematic inflammations of the ſtomach, he obſerves, are more frequent than the phlegmonic. Wherever this inflammation affects the mouth and fauces, and there is at the ſame time in the ſtomach an unuſual ſenſibility to acrid ſubſtances, with frequent vomiting, there can be little doubt, he thinks, that the inflammation has ſpread to this organ. And theſe ſymptoms, with loſs of appetite, thirſt, and a frequent pulſe, although there is no affection of the mouth and fauces, often indicate an erythematic inflammation of this organ, which after ſuch ſymptoms ſometimes ſhews itſelf in the fauces.

But even where the inflammation is of the erythematic kind, the ſymptoms are often ſuch as characteriſe phlegmonic inflammation of the ſtomach; for I have ſeen the erythema ſpread from the mouth to the ſtomach, and there occaſion all the uſual ſymptoms of phlegmonic gaſtritis. They were, however, I think, leſs violent; but it is evident that a greater or leſs degree of the ſame ſymptoms cannot ſerve the purpoſes of a diagnoſis. On the other hand, I have ſeen in the inteſtines not that uniform and diffuſe redneſs which indicates the preſence of erythematic inflammation, but the uſual appearance of phlegmonic inflammation, where none of the ſymptoms had indicated its preſence. Such caſes, however, are very rare, and muſt not be allowed to influence our practice. Any caſes of this kind which have come under my obſervation have been ſymptomatic.

The erythematic inflammation in internal parts, as well as on the ſurface, ſhews a tendency to ſpread, leaving thoſe which it firſt occupied, when it affects neighbouring parts; in this way it often extends along the whole alimentary canal. In the inteſtines, contrary to the effects of phlegmonic inflammation, it occaſions diarrhœa, and the vomiting frequently ceaſes as the diarrhœa comes on.

Reſolution, a tendency to which, as in other phlegmaſiæ, is known by the general mildneſs of the ſymptoms, and particularly by their yielding to the proper remedies, is the only favourable termination of gaſtritis. If the ſymptoms are ſevere and do not ſuffer remiſſions, the period of reſolution is generally paſt within twenty-four hours. In leſs violent caſes, and when conſiderable remiſſions take place, it may happen after the diſeaſe has laſted for many days.

A tendency to ſuppuration, which is a rare termination of gaſtritis, is known by the ſymptoms continuing without any conſiderable remiſſion, and at the ſame time with no great

degree of violence for one or two weeks or longer. When an abſceſs is formed there is a remiſſion of the pain, generally preceded by rigours. But a ſenſe of weight about the precordia and much anxiety haraſs the patient, a change of ſymptoms analogous to that above deſcribed indicating ſuppuration in pneumonia. The febrile ſymptoms which attend all internal ſuppurations are the ſame. They are at firſt conſiderably milder than thoſe which accompany the inflammatory ſtage; in a ſhort time, however, if they do not ſubſide, they begin to ſuffer regular exacerbations, and by degrees aſſume the form of hectic fever, of which I ſhall ſoon have occaſion to ſpeak at greater length.

The danger of an abſceſs in the ſtomach is evident. It generally proves fatal unleſs it opens into the ſtomach, in which caſe the matter is diſcharged by vomiting and ſtool, and the ulcer ſometimes heals.* In the Memoirs of the Academy of Paris, for the year 1704, the reader will find a caſe, in which, although the abſceſs burſt into the ſtomach, the patient died in conſequence of the ulcer left by it. Eller † relates a ſimilar caſe in which the patient lived ſeveral years after the formation of the ulcer. Such caſes ſometimes terminate ſuddenly by a fatal hemorrhagy. There are inſtances on record in which the inflammation having cauſed an adheſion between the ſtomach and parietes of the abdomen, the abſceſs broke externally. Van Swieten mentions more than one caſe of this kind. One from the Journal des Scavans, in which the contents of the ſtomach were diſcharged through the opening, ſo that it was neceſſary to keep it cloſed by compreſſes and bandages. The patient lived under theſe circumſtances for no leſs than twenty-three years, and enjoyed ſo good a ſtate

* I have seen abscesses of the liver burst into the stomach and into the intestines, the wound in both cases soon healed.

† Obs. de Cog. et Cur. Morb.

of health that ſhe was able to undergo conſiderable labour. When the abſceſs burſts into the cavity of the abdomen, it occaſions purulent aſcites, which always proves fatal.

The tendency to gangrene in gaſtritis is known as in ſimilar caſes by the unuſual violence of the ſymptoms, and by their not yielding to the proper remedies. When gangrene actually takes place its preſence is indicated by the remiſſion of the pain, the pulſe at the ſame time becoming more frequent and feeble, and the anxiety and debility increaſing, with cold, clammy, and partial ſweats. I have already had occaſion to obſerve, that in viſceral inflammations, where the gangrene occupies but a ſmall portion of the inflamed part, the pain often continues to the laſt. In theſe circumſtances it is more difficult to aſcertain its preſence. This may generally be done, however, by an attention to the other ſymptoms. It is almoſt needleſs to ſay that gangrene of the ſtomach is uniformly and quickly fatal.

Boerhaave ranks ſchirrus and cancer of the ſtomach among the terminations of gaſtritis. But moſt writers agree that they ariſe from other cauſes.

Gaſtritis appears ſometimes to prove fatal merely from the ſympathy which exiſts between the ſtomach and other vital organs. "From the ſenſibility of the ſtomach, and "its communication with the reſt of the ſyſtem," Dr. Cullen obſerves, "it would ſeem that the inflammation of "this organ, by whatever cauſes produced, may be attended "with fatal conſequences; in particular, by the great de-"bility which ſuch inflammation ſuddenly produces, it may "quickly prove fatal without running the common courſe "of inflammations." And Boerhaave,* after enumerating other terminations of gaſtritis, obſerves, that it ſometimes

* Aph. 953.

induces ſudden death with convulſions, before any of theſe terminations can take place.

SECT. II.

Of the Cauſes of Gaſtritis.

GASTRITIS, fortunately is one of the moſt rare of the phlegmaſiæ.

The ſame ſtate of body prediſpoſes to it as to other inflammatory diſeaſes. I have already had occaſion to point out the habit and mode of life which gives this prediſpoſition.

Among the occaſional cauſes, cold applied in various ways ſtill holds a principal place. There is no cauſe of this diſeaſe ſo common as checking ſweat by drinking cold fluids.

Acrid ſubſtances received into the ſtomach, eſpecially when its mucus has been abraded or ſo changed as not properly to perform its office, may excite gaſtritis. It is to be recollected that the ſubſtances moſt acrid to the taſte are not thoſe which occaſion moſt irritation in the ſtomach. The ſtrongeſt ſpices are often received into the ſtomach without inconvenience, and the moſt inſipid ſubſtances frequently affect it moſt powerfully. All ſubſtances, however, which ſtrongly affect the taſte, to a certain degree irritate the ſtomach, and if uſed very freely by thoſe who are ſtrongly prediſpoſed to gaſtritis, particularly thoſe who have lately laboured under it, tend to excite it. Cathartics, and emetics, poſſeſs a peculiar power of irritating the ſtomach. There are few cathartics which, if given

in very large doſes, do not prove emetic. It is not ſurpriſing, therefore, that we find the uſe of draſtic emetics and cathartics ranked amongſt the cauſes of gaſtritis. To this head alſo belong a certain claſs of poiſons.

The more irritating articles of diet may be ranked among the exciting cauſes of this diſeaſe. Animal food and fermented liquors often renew it in thoſe who have lately laboured under it, and the exceſſive uſe of the latter may excite it in the leaſt prediſpoſed.

It may ariſe from acrid matter generated within the body, as ſometimes happens in various ulcerous affections of the fauces and œſophagus. Dr. Cullen thinks that gaſtritis occaſioned by the application of acrid ſubſtances is generally of the erythematic kind.

Few things apply a more hurtful irritation to the ſtomach than over-diſtenſion. When food is taken in too great quantity, and is at the ſame time of difficult digeſtion, ſo that the diſtenſion is kept up for a conſiderable length of time, it may occaſion gaſtritis. The reader will find ſome good obſervations on this cauſe of gaſtritis, and caſes illuſtrating them, in Eller's Treatiſe de Cog. et Cur. Morb.

A blow on the region of the ſtomach, or wounds in the ſtomach or neighbouring parts, the preſſure of the enſiform cartilage when it is diſlocated or broken, ſo that it preſſes on the ſtomach, may excite this diſeaſe.

Like the other phlegmaſiæ, it may ariſe from the various cauſes of ſudden plethora, particularly the ſuppreſſion of hemorrhagies or other habitual evacuations.

It is not uncommon for the inflammation of ſome neighbouring part to ſpread to the ſtomach, particularly that of the œſophagus and duodenum.

Such are the chief occaſional cauſes of gaſtritis. There are ſome whoſe operation ſeems wholly involved in obſcurity.

I have more than once had occaſion to obſerve, that certain peſtilential fevers are very generally accompanied with inflammation of the ſtomach and bowels, and this combination is ſo frequent, that Van Swieten and others have ſuppoſed that the contagion often makes its firſt attack on the ſtomach, occaſioning inflammation of this organ.

In eruptive fevers it ſometimes ſupervenes on the ſudden diſappearance of the eruption;* and, probably from the great debility which attends ſuch caſes, generally ſoon runs to gangrene.

The gout has been ranked among the exciting cauſes of gaſtritis. When we come to conſider this diſeaſe, however, we ſhall find reaſon to doubt whether it ever excites viſceral inflammation.

SECT. III.

Of the Treatment of Gaſtritis.

The treatment of gaſtritis is ſo ſimilar to that of ſeveral diſeaſes we have been conſidering, that it will not be neceſſary to ſpeak of it at great length. There are ſome circumſtances peculiar to it which deſerve attention.

As in the other phlegmaſiæ, blood-letting is the remedy on which we chiefly depend, and there is no caſe in which it is carried to a greater extent than in gaſtritis. As ſoon as the ſymptoms ſhew themſelves we have recourſe to

* Dr. M'Bride's Practice of Medicine.

this remedy, and if they do not yield, it muſt be carried as far as the habit will bear. And ſo far from only letting blood when the pulſe is full and ſtrong, the ſmaller and weaker it is, provided the diſeaſe is idiopathic, copious and early blood-letting becomes the more neceſſary. As in the caſes in which we have hitherto found blood-letting neceſſary, we employ it with a view to diminiſh the ſtrength of the pulſe, in this inſtance it is employed with a view to increaſe it, and it is only as it has this effect that it gives relief. We are to diſtinguiſh, however, between a ſtrong and a hard pulſe. The relief obtained from blood-letting is, in all the phlegmaſiæ, in proportion to the diminution of the hardneſs of the pulſe. The feebleneſs of the circulation in gaſtritis increaſes the danger of delaying blood-letting, for it ſometimes, even in the ſpace of a few hours, becomes ſo languid, as I have myſelf ſeen, that it is impoſſible to procure the proper quantity of blood.

It is not unuſual for the ſymptoms of gaſtritis immediately to diſappear on a large quantity of blood being ſuddenly taken away. But we muſt be prepared for a recurrence of the diſeaſe, which to a greater or leſs extent almoſt always happens.

The repetition of the blood-letting is regulated in the ſame manner as in the other phlegmaſiæ. The leſs remiſſion the ſymptoms ſuffer after the firſt blood-letting, it muſt be repeated the ſooner, and to the greater extent.

With regard to the evacuation by the bowels, it muſt be ſolicited by cathartic clyſters, as the ſtate of the ſtomach prevents our giving medicines by the mouth, which ſerve only to increaſe the diſeaſe. To this, however, there are exceptions. Gaſtritis, it has been obſerved, is ſometimes induced by over-diſtenſion of the ſtomach. Nothing tends more than over-diſtenſion to impair the power of the muſ-

cular fibre. If the urine, for example, be retained till the quantity accumulated has greatly diſtended the bladder, it often has no longer power to expel it. The ſame happens to the ſtomach, when it is over-diſtended it loſes its power to expel its contents by vomiting; for although the ſtomach is aſſiſted in vomiting by the abdominal muſcles and diaphragm, yet it would appear that the action of the muſcular fibres of the ſtomach itſelf are neceſſary in this operation. Hence it is, that in gaſtritis occaſioned by over-diſtenſion, the patient is often tormented by ineffectual efforts to vomit. Little, it is plain, is to be expected from any remedy while the cauſe which produced the diſeaſe is ſtill applied. In ſuch caſes, therefore, at the ſame time that we employ the uſual remedies of gaſtritis, it is neceſſary to have recourſe to ſome means of leſſening the contents of the ſtomach. Gliſters certainly tend to this effect, but not very powerfully. Emetics and cathartics taken by the mouth are the only effectual means. Nothing, it is evident, could occaſion a more hurtful irritation of the ſtomach than an emetic, when it is ſo loaded that the ordinary efforts of vomiting are ineffectual. We here, therefore, endeavour to relieve the ſtomach by the exhibition of cathartics by the mouth, which are often ſucceſsful;* and farther to ſolicit the due action of the ſtomach, the inteſtines ſhould, at the ſame time, be excited by gliſters. By theſe means, part of the contents of the ſtomach paſſing into the inteſtines, the remaining part will be rejected by vomiting.

We muſt alſo give medicine by the mouth in this diſeaſe, when acrid or poiſonous ſubſtances have been received into the ſtomach. It is then neceſſary to promote the vomiting

* See the observations of Eller just alluded to.

and defend the ſtomach by the uſe of mild mucilaginous and oily fluids, till there is reaſon to believe that the offending cauſe is removed. Cathartics are particularly indicated if the poiſon has been long enough in the body to give reaſon to believe that it has paſſed into the inteſtines. They ſhould be given in ſmall compaſs, and in the form of pills, that they may, if poſſible, be retained. In theſe circumſtances it is evident, that the frequent repetition of cathartic clyſters is proper; which, while they expel the contents of the lower bowels, tend by ſympathy to increaſe the periſtaltic motion of the whole alimentary canal. If we are acquainted with any ſubſtance which corrects the noxious quality of the poiſon, immediate recourſe muſt be had to it.

Even where diarrhœa attends, mild mucilaginous and oily clyſters are ſerviceable, both by promoting the evacuation of any irritating matter which the inteſtines may contain, and by allaying irritation.

The urgent thirſt, and duration of the diſeaſe, (for gaſtritis when it ſuffers remiſſions, ſometimes laſts, as we have ſeen, for many days,) render an attention to diet neceſſary. The patient ought not to be tormented by conſtant thirſt, but at the ſame time he muſt be reſtricted both in the quantity and quality of what he drinks. Mild acidulous fluids ſhould be choſen, and given frequently and in ſmall quantity, ſo that they may as little as poſſible increaſe the vomiting, which with all the care that can be taken they ſeldom fail to do.

The food muſt be regulated on the ſame principle. For the firſt days, indeed, a total abſtinence from food is beſt; but when the diſeaſe continues longer, it is neceſſary to ſupport the ſtrength by ſmall quantities of the mildeſt kinds. Any ſolid food irritates too much. Mucilaginous decoctions are the beſt.

We are cautioned againſt endeavouring to ſtop the vomiting in gaſtritis by any preparation of opium. The impropriety of giving opium at the commencement is apparent. In the advanced ſtages, however, after the force of the diſeaſe has been broken by proper evacuations, anodyne clyſters, and even mild opiates given by the mouth, (proper means being uſed to ſupport the action of the bowels) ſometimes allay the vomiting, and tend to ſhorten the diſeaſe.

It ſeems to have been overlooked by many writers, that the bad effects of opium in the phlegmaſiæ appear to proceed not from any local action of the opium on the inflamed part, but from its increaſing the vis a tergo. When this has been ſufficiently reduced, and there is conſequently little or no hardneſs remaining in the pulſe, the chief objection to opiates is removed.

The temperature of the patient's chamber, as in the other phlegmaſiæ, ſhould be moderate, and as uniform as poſſible.

Such are the general remedies employed in gaſtritis. When it ſupervenes on the retroceſſion of eruptions, the means of recalling them, as far as the inflammatory nature of the diſeaſe admits of it, muſt make part of the treatment. It remains to make ſome obſervations on the local means employed in this diſeaſe.

Local blood-letting is ſeldom recommended in gaſtritis; although the ſame good effects are to be expected from it as in the other phlegmaſiæ. It is peculiarly well adapted to thoſe ſymptomatic caſes in which general blood-letting to any extent is inadmiſſible, or at leaſt an ambiguous practice. But in all ſevere caſes, it ſhould, for reaſons I have already ſtated, be [illegible]ed with general blood-letting, unleſs, as I have more than once witneſſed, the diſeaſe immediately yields to the latter.

Blifters are more generally employed, and ought never to be omitted after the hardnefs of the pulfe is reduced by blood-letting.

Fomentations are more ufeful in abdominal inflammations, than in thofe of the thoracic vifcera. They are, however, but feeble remedies, and the conftant motion of the body, from the feverity of the pain, (which often makes it difficult to retain even blifters in the proper place,) generally renders them very troublefome; and they feem often to increafe the anxiety, one of the moft diftreffing fymptoms. The warm bath is both more grateful and more efficacious, and may be ufed in aid of more powerful means.

When the fymptoms of fuppuration make their appearance, medicine can be of little further ufe; and if the patient is faved, it is by the accidental feat of the abfcefs. If it burfts into the ftomach, irritating articles of diet fhould be avoided till the ulcer is healed. When its burfting forms an external ulcer, the treatment muft be left to the furgeon. In this cafe, indeed, nearly all that can be done is to prevent the contents of the ftomach from efcaping by the wound. Neither are there any means of cure when the matter is difcharged into the cavity of the abdomen. This termination though certainly, is not immediately, fatal. Gangrene of the ftomach always is fo.

It has been faid that gaftritis fometimes affumes a remitting form. In fuch cafes the bark has been recommended. Its effects, however, have not been afcertained.

Dr. Cullen does not treat of the inflammation of the fpleen, pancreas, or omentum. From their fituation and office, it is impoffible for us to diftinguifh inflammation of

them from that of neighbouring parts. Their functions are ſo obſcure, that leſion of them produces no immediate ſenſible effect. The ſpleen has even been cut out in brutes, or the veſſels going to and coming from it ſecured by ligature, without materially affecting the health of the animal.* And there are many caſes on record, where parts of the omentum have been loſt in conſequence of wounds, and the patient has afterwards enjoyed good health. Nay, the omentum has been found almoſt wholly wanting in people who died ſuddenly at a time when they appeared in perfect health.† Hence it often happens, that inflammation of the ſpleen, pancreas, or omentum, are miſtaken for inflammation of neighbouring parts. Thus Van Swieten gives a caſe, ſent to him by De Haen, in which inflammation of the ſpleen was miſtaken for pleuriſy. Inflammation of the pancreas is often miſtaken for gaſtritis; and inflammation of the omentum may be readily miſtaken for enteritis. It ſeldom happens that any of theſe parts are affected with inflammation without ſome of the neighbouring parts partaking of it, which ſtill adds to the difficulty of the diagnoſis. It fortunately happens, however, that an accurate diagnoſis in ſuch caſes is of no conſequence; the mode of practice being the ſame in inflammation of the ſpleen and of the lungs, of the pancreas and ſtomach, of the omentum and inteſtines. All that is neceſſary is to ſuit the practice to the ſeverity of the ſymptoms.

The phlegmaſia which next demands attention is the Enteritis, or Inflammation of the Inteſtines; which we ſhall find very ſimilar to gaſtritis, both in its ſymptoms and treatment.

* Malpig. de Liene, Brunner de Pancreate.

† The Theſaurus Anatomicus of Ruysch.

CHAP. XIV.

Of Enteritis.

Enteritis is defined by Dr. Cullen,

"Pyrexia typhodes; dolor abdominis pungens, tendens, "circa umbilicum torquens; vomitus; alvus pertinaciter "adſtricta." He divides this diſeaſe in the ſame manner as gaſtritis, into the enteritis phlegmonodæa, and enteritis erythematica; but finds the ſame difficulty as in the caſe of gaſtritis in diſtinguiſhing theſe ſpecies.

The firſt part of the definition of enteritis, pyrexia typhodes, is objectionable, for the ſame reaſon that it was objected to in the definition of gaſtritis.

SECT. I.

Of the Symptoms of Enteritis.

The patient complains of an acute burning pain in the abdomen, ſometimes confined to a particular part, at other times felt more generally, and particularly about the umbi-

licus. Although it does not intermit, it becomes more ſevere at intervals, which has, with much probability, been attributed to the contents of the inteſtines now and then paſſing over the inflamed part. It is one of the beſt diagnoſtics of the pain attending enteritis, that it is greatly increaſed on preſſure. Other pains of the abdomen are increaſed on preſſure, but are diſtinguiſhed by other attending ſymptoms.

As enteritis advances, the abdomen becomes more or leſs tumid; and in by far the majority of caſes, obſtinate coſtiveneſs attends throughout the diſeaſe. We have ſeen diarrhœa enumerated among the ſymptoms of erythematic enteritis, in which all the ſymptoms are milder than in the phlegmonic. Even in the worſt forms of enteritis, a thin matter is ſometimes paſt by ſtool. There is generally a conſiderable degree of nauſea, and often vomiting. The inverted motion of the ſtomach is ſometimes communicated to the inteſtines, and extends ſo far along their courſe that feculent matter is rejected by vomiting.

The pulſe is frequent, ſmall, and hard, as in gaſtritis. Some writers aſſert, that the pulſe is ſometimes full in this diſeaſe as well as in gaſtritis. It is rarely ſo frequent in either as it uſually is in typhus, ſeldom much exceeding a hundred. I have ſeen ſo ſevere a caſe of gaſtritis and enteritis combined, that it terminated fatally in about twenty-four hours, in which the pulſe, at the height of the diſeaſe, did not exceed ninety-two.

The heat is ſeldom very great, the thirſt is urgent, and the urine high coloured.

The remarkable depreſſion of ſtrength obſerved in gaſtritis, alſo attends enteritis, but in general it is neither ſo ſudden nor exceſſive.

It is not always eaſy, we have ſeen, to diſtinguiſh enteritis from other viſceral inflammations; and if the inflammation ſpreads

to neighbouring parts, it often becomes impoſſible to aſcertain its chief ſeat. When the upper part of the colon is affected, the ſymptoms ſometimes reſemble thoſe of pleuriſy or hepatitis. When it is confined to the rectum, it produces teneſmus, conſtriction of the anus, and other ſymptoms of piles, for which it is frequently miſtaken. Even in this caſe, however, the difficulty of the diagnoſis will ſeldom lead to any material error in practice, for when piles are attended with conſiderable pain and fever, the practice in the two caſes is the ſame, and indeed, they are then generally attended with more or leſs inflammation of the rectum.

The prognoſis is collected as in other caſes from the ſeverity of the ſymptoms, and the effects of the means employed. But there are alſo ſome other circumſtances which demand attention. The inflammation is more dangerous when it occupies the ſmall than the large inteſtines; and upon the whole, the nearer its ſeat approaches to the ſtomach, the greater is the danger. There is ſome difficulty in aſcertaining what part of the inteſtine is inflamed. This is to be attempted by attending to the ſeat and degree of the pain, the degree of nauſea and vomiting, and the ſinking of the ſtrength; for all theſe ſymptoms are more violent when the diſeaſe is ſeated in the ſmall than in the large inteſtines, and in the former, in proportion as it is nearer the ſtomach. When it is in the rectum, we are further aſſiſted by the ſymptoms juſt mentioned. When the inflammation is in the higher parts of the colon, it is very difficult to aſcertain its ſeat, for the pain is then in the region of the ſtomach, and the nauſea and vomiting are often conſiderable.* We ſhall

* See the 22d ſection of the 43d Epiſtle of Morgagni de Cauſis et Sedibus Morborum.

not err in the treatment, however, if, without endeavouring to aſcertain the precise ſeat of the inflammation, we proportion the means to the violence of the ſymptoms.

I have already had occaſion to obſerve, that the ſymptoms are milder in the caſes attended with diarrhœa, than where obſtinate coſtiveneſs attends. In the former, conſequently, the prognoſis is better. As in other viſceral inflammations, the prognoſis depends as much on the habit of the patient as on the ſeverity of the diſeaſe. From the nature of the means of cure, the danger is always great when these diſeaſes ſupervene in debilitated ſtates of body. When enteritis ſupervenes on the worſt forms of typhus, which is not unuſual, it generally proves fatal. It is particularly dangerous, Quarin obſerves, in pregnant women, from the probability of its occaſioning abortion; beſides the conſtipation, and vomiting, are generally obſtinate in them, and the ſituation of the abdominal viſcera compreſſed by the diſtended uterus, is unfavourable.

Reſolution may be regarded as the only favourable termination of enteritis. It is frequently preceded by a moderate diarrhœa, the moſt favourable ſymptom in this diſeaſe. When the rectum is the ſeat of the inflammation, it is often relieved by the hæmorrhois.

The tendency to ſuppuration and gangrene, is known by the ſame ſymptoms as in gaſtritis. Suppuration is even more rare than in the latter diſeaſe. When the ſymptoms, however, have continued moderate for many days, without yielding to the employment of proper remedies, it is to be feared, and if irregular ſhiverings come on, and the patient complains of a ſenſe of weight, and an obtuſe, inſtead of acute pain, which accompanies the inflammatory ſtage, little doubt will remain that an abſceſs is formed. Its conſequences are ſimilar to thoſe of an abſceſs of the ſtomach, except that the former ſeldom or never burſts externally. If it burſts into the cavity

of the inteſtines, it produces a purulent diarrhœa; the ulcer is rarely cured. The coats of the inteſtines frequently ſlough off and are diſcharged by ſtool; and the patient waſted by hectic fever, ſuffers a lingering and painful death. When the abſceſs burſts into the cavity of the abdomen, it forms, as in the caſe of gaſtritis, the purulent aſcites.

There is no inflammation, perhaps, ſo prone to gangrene as enteritis. The tendency to gangrene is known here, as in the other phlegmaſiæ, by the unuſual violence and obſtinacy of the ſymptoms. The preſence of gangrene is known by the ceaſing of the pain; by the pulſe becoming extremely feeble and frequent, ſometimes intermitting; the body being covered with a cold ſweat; thin ichorous, often livid or black, ſtools paſſed involuntarily; hiccup; loſs of ſight; fainting; &c. under which ſymptoms the patient ſoon expires.

It was obſerved of gaſtritis, that it often proves fatal without the inflammation terminating in any of the uſual ways. The ſame is true of enteritis; the ſenſibility and importance of the ſtomach and inteſtines being ſuch that the mere irritation and leſion of function, occaſioned by the inflammation, are often ſufficient to deſtroy life.

Gangrene, we have ſeen above, ſometimes ſupervenes in external parts without previous inflammation. Many have thought that this now and then happens alſo internally, particularly in the inteſtines. I am not acquainted with any caſes which ſanction this opinion, except thoſe caſes of extreme debility in which the vis a tergo is too feeble to produce the ſymptoms of inflammation.

Enteritis ſometimes produces an intuſſuſceptio. It is probable, that this has taken place when part of the gut ſloughs off. The patient may ſurvive the ſloughing of the internal coat, although no intuſſuſceptio has taken place.

SECT. II.

Of the Cauſes of Enteritis.

ENTERITIS is a much more frequent diſeaſe than gaſtritis, all the cauſes of the latter above enumerated may excite it. It is more readily produced by cold applied either to the extremities or to the abdomen than gaſtritis, but leſs readily by acrid ingeſta. The ſmall inteſtines are more ſubject to inflammation than the large, which has been aſcribed to their greater delicacy.

There are ſome cauſes which more particularly belong to enteritis, accumulation of the fæces, ſpaſmodic colic, certain ſtates of the bile, concretions forming in various parts of the inteſtines, herniæ, and intuſſuſceptio. A deficiency of the omentum is alſo ranked among the cauſes of this diſeaſe.*

SECT. III.

Of the Treatment of Enteritis.

As in other viſceral inflammations, we chiefly rely on blood-letting. The obſervations made reſpecting the extent and repetition of blood-letting in gaſtritis, are applicable here.

* Quarin de Febribus.

Catharſis is of ſtill greater importance in enteritis than gaſtritis, and as the nauſea and vomiting are often leſs urgent, we have an opportunity in moſt caſes of exhibiting cathartics by the mouth, which ſhould never be neglected, but we muſt proceed cautiouſly, and uſe ſuch cathartics as are leaſt apt to offend the ſtomach. I have found none ſuperior to calomel and the ſulphate of magneſia diſſolved in a large proportion of water. The employment of cathartics by the mouth ſhould not prevent the uſe of mild clyſters, which both ſoothe the pain and tend to ſecure the operation of the cathartics. Bloodletting ſhould precede the cathartic, that time may not be loſt, and becauſe it is not only the more powerful remedy, but diſpoſes the bowels to be acted upon by the cathartic. As in gaſtritis, we are often prevented by the nauſea and vomiting from giving any thing by the mouth; clyſters muſt then be uſed more frequently and compoſed of more cathartic materials. They ſhould not be ſo bulky as greatly to diſtend, which irritates the inteſtines, and ſhould be given ſlowly, that they may be retained for the proper time.

The obſervations made reſpecting the uſe of opium in gaſtritis might be repeated here. Some practitioners ſpeak of the employment of opiatas even at an early period of enteritis as a ſafe practice. "I have often ſeen antiſpaſmodics," Dr. Gibſon obſerves, "and particularly opiates, ſucceſsful in re-"moving this diſeaſe."* There is every reaſon to believe, that thoſe who make ſuch obſervations have confounded other pains of the bowels with enteritis. Sir John Pringle recommends opium to be given with cathartics, for the purpoſe of enabling the ſtomach to retain them. This, particularly at an early period, appears to be a very queſtionable practice; and on comparing the character of this diſeaſe, which Sir

* Dr. Gibson's Treatise on Fevers.

John Pringle, following the Ancients, ſeems to adopt, in which there is no mention of fever, with ſome parts of his practice, it would appear probable, that even he is not wholly free from the above charge. It is an obſervation of Van Swieten and others well acquainted with the diſeaſe, that when opiates are given at an early period, it frequently terminates in gangrene.

It may be aſked, why opium is hurtful in gaſtritis and enteritis, while in many external inflammations, its application is highly beneficial. This ſeems to ariſe, as may be inferred from what was ſaid above, not from the local action of the opium on the ſtomach and inteſtines, but from its being received into the maſs of blood, and increaſing the vis a tergo; a ſimilar obſervation applies to fermented liquors and other ſtimulants.

On the local remedies there is little to be added to what was ſaid in ſpeaking of other phlegmaſiæ. It ſometimes happens when the inflammation is ſeated in the rectum, that piles appear, inflame and ſwell. Leeches applied in the neighbourhood, or to the piles themſelves, are then proper.

Rubefacients are ſerviceable. Flannel dipt in brandy and ſprinkled with pepper applied over the abdomen generally affords ſome relief; but all applications of this kind are inferior to bliſters. When they are applied to the abdomen, the pain ſometimes abates as ſoon as the burning of the ſkin is perceived; and what deſerves particular notice, the ſame cathartics and clyſters, as in the caſe of blood-letting, often ſucceed, which before their application had failed.

Fomentations are more frequently employed in enteritis, than in any other phlegmaſia, and various diſagreeable applications has been recommended for this purpoſe. Boerhaave and others adviſe young animals cut up and applied warm, the ſkin of ſheep newly killed, &c. But there is no reaſon to

believe that ſuch applications are ſuperior or indeed equal to flannel dipt in warm water, and wrung ſo that little more than the vapour is applied. This is not only more cleanly and can be applied of any temperature, but lighter alſo and more manageable. Eller, who is a great advocate for the uſe of fomentations in this diſeaſe, particularly inſiſts on their being ſuch as ſhall not give uneaſineſs by their preſſure.

The warm bath is a more powerful means. It tends to allay the pain and diſpoſes the bowels to act.

The diet is the ſame as in other viſceral inflammations. To prevent a relapſe, it ſhould be mild and the body kept gently open for ſome time after the diſeaſe.

When the abſceſs burſts into the cavity of the inteſtines, various medicines are recommended by the older writers for healing the ulcer, but little or nothing is to be expected from them. When the patient is much reduced by the diſcharge, an infuſion of the bark and ſome chalibeate waters have been found uſeful.

CHAP. XV.

Of Hepatitis.

Hepatitis has been divided into two ſpecies, the acute and chronic. For owing probably to the natural inſenſibility of the liver, diſſection has more frequently in it than in any of the other viſcera, diſcovered traces of inflammation, where

they had neither been indicated by fever, nor the other ſymptoms of hepatitis, properly ſo called. The chronic hepatitis does not of courſe belong to the diſeaſes which form the ſubject of this treatiſe. For the moſt part the acute hepatitis only is treated of by authors who practiced in Europe, Pringle, Boerhaave, Van Swieten, Lieutaud, M'Bride, Eller, Quarin, Sims, Burſerius, Bianchus, Cullen,* &c. Thoſe who practiced within the Tropics, Lind, Clark, Bontius, Rollo, Reid, Girdleſtone, &c. treat of the chronic. Dr. Cullen in his *First Lines* conſiders the chronic hepatitis as a diſeaſe only to be known by its conſequences. "As this chronic "inflammation," he obſerves, "is ſeldom to be certainly "known, and, therefore, does not lead to any determined "practice, we omit treating of it here, and ſhall only treat "of what relates to the acute ſpecies of hepatitis."

The chronic hepatitis ſeems to be a more frequent diſeaſe in Europe than practitioners have been aware of, which may be accounted for by the obſcurity of its ſymptoms. It has even been epidemic in this part of the world. The reader will find an epidemic of this kind deſcribed by Fiſher, in the fifth volume of Haller's Diſp. ad Morb. Hiſt. et Cur. Pert. He may alſo conſult two papers in the ſecond volume of the Acta. Soc. Med. Hafn. I have often found the application of leeches to the hepatic region of great uſe in the obſtinate bilious affections of this country, where there was none of the ſymptoms of hepatitis, if we except ſome pain, often very ſlight, from preſſure on this region. The chronic hepatitis of Europe ſeldom runs to ſuppuration.

Acute hepatitis is defined by Dr. Cullen,

"Pyrexia; hypogaſtrii dextri tenſio et dolor, ſæpe pun-

* Lysons, Millar, Saunders, and some others are exceptions.

" gens pleuritici inſtar, ſæpius obtuſus; dolor ad claviculam
" et ſummum humeri dextri; decubitus in ſiniſtrum latus
" difficilis; dyſpnœa; tuſſis ſicca; vomitus; ſingultus."

All theſe ſymptoms are rarely met with in the ſame caſe. When the dyſpnœa and cough are conſiderable, for inſtance, there is generally no vomiting; and when this ſymptom attends, the patient is ſeldom much troubled with dyſpnœa and cough. It is neceſſary, however, to mention in the definition, ſymptoms which only occaſionally attend, becauſe the conſtant ſymptoms of this diſeaſe are not ſufficient to diſtinguiſh it. On this account both Sauvages and Sagar rank among the diagnoſtic ſymptoms of hepatitis thoſe of jaundice, but they are not ſufficiently frequent materially aſſiſt the diagnoſis.

SECT. I.

Of the Symptoms of Acute Hepatitis.

Like other inflammations, hepatitis makes its attack more or leſs ſuddenly, the patient ſometimes complaining of a tightneſs about the precordia, accompanied with a degree of anxiety and fever, for ſome time before the ſymptoms peculiar to the diſeaſe ſhew themſelves; at other times, pain in the region of the liver is among the firſt ſymptoms. In either caſe the acceſſion is generally attended with irregular chills.

The pain is ſometimes ſhooting, accompanied with a ſenſe of tenſion in the part; in other caſes, more conſtant; ſometimes acute; at other times, obtuſe and deep-ſeated.

It is not confined to the region of the liver, but extends to the breaſt, clavicle, and ſhoulder, particularly of the right

ſide; and in the laſt it is often more acute, than in the ſeat of the diſeaſe. There are ſometimes acute wandering pains of the back and limbs, reſembling thoſe which attend fever. The hypochondrium is tender on preſſure, eſpecially when the poſition of the body is ſuch as to relax the abdominal muſcles.

The pain is ſometimes in both ſcapulæ, and frequently felt in the left ſide under the lower falſe ribs.* It is frequently moſt ſevere when the patient lies on the left ſide; ſometimes the contrary. He is generally eaſieſt on the back.

Practitioners have been at ſome pains to determine what part of the liver is affected in different caſes of hepatitis. In this we are aſſiſted by the ſeat of the pain. When it extends to the clavicle and cheſt, the convex part is moſt frequently affected; when it is more confined, and much increaſed on preſſure, the anterior part of the liver is the principal ſeat of the diſeaſe. When it extends chiefly to the region of the ſtomach, and is not much increaſed on preſſure, there is reaſon to believe that the concave part is moſt affected.

In this, as in other viſceral inflammations, the kind of the pain has been ſuppoſed to point out whether the membrane or the paranchima is principally affected; in the former caſe the pain being acute, in the latter obtuſe. The obſervations made on this ſubject, in ſpeaking of pneumonia, however, are applicable here.

Dr. Girdleſtone obſerves, that when the pain of the ſhoulder attends hepatitis, its ſeat generally correſponds with the part of the liver moſt affected, being anterior or poſterior, according as the anterior or poſterior parts of the liver are the ſeat of the diſeaſe, and when the inflammation attacks the left lobe, the pain is often in the left ſhoulder.

* See a paper on Hepatitis, by Dr. Chisholm, in the 11th vol. of the Medical Commentaries.

The pain of the ſhoulder, as well as the ſide is often increaſed during inſpiration, which is impeded by it. It is moſt ſo, as might be ſuppoſed, when the parts lying neareſt the diaphragm are inflamed.

But in determining the part of the liver affected, we truſt more to other ſymptoms than to the ſeat of the pain. In the laſt caſe, the cough is moſt ſevere, and hiccup moſt frequently attends.

The cough is generally ſhort, dry, and frequent, and the hiccup, which is never a favourable ſymptom, is ſometimes ſo violent as almoſt to interrupt reſpiration.

When hepatitis is attended with cough and difficulty of breathing, the reader will perceive how readily it may be miſtaken for pneumonia, and he will find from the diſſections of Morgagni and others, that this has frequently happened. When the convex ſurface of the liver is much inflamed, the inflammation indeed, now and then, ſpreads to the diaphragm, and even to the lungs. There is often alſo conſiderable external ſwelling, and the inflammation ſometimes ſpreads to the abdominal muſcles, but rarely to the ſkin.

When the concave part of the liver is affected, the ſtomach partakes of the diſorder as much as the lungs do in the former caſe, the nauſea and vomiting being more urgent than in other forms of hepatitis, and here the cough and dyſpnœa are either wanting or preſent in a much leſs degree.

In moſt inſtances the ſecretion of the bile is increaſed, and it ſometimes happens, that its flow into the inteſtines is impeded, generally, perhaps, by a conſtriction of the ducts. The ſkin, white of the eyes, and urine, are then tinged with yellow, as in jaundice. Theſe ſymptoms, as we ſhould ſuppoſe, a priori, moſt frequently attend when the inflammation is ſeated in the concave part of the liver.* Inflammation

* See the obſervations of Burserius, Quarin, and others.

of this part alſo is generally attended with the ſame anxiety and debility, though in a leſs degree, which attend gaſtritis, from which it is often difficult to diſtinguiſh it. The truth is, that although there are many caſes of pneumonia, gaſtritis, and hepatitis, in which the characteriſtic ſymptoms of each being diſtinct, there can be no doubt reſpecting the ſeat of the inflammation; yet, from the vicinity of the lungs, liver, and ſtomach, the ſympathy of theſe parts, the difficulty with which the preciſe ſeat of internal pains is aſcertained, and above all, the tendency of inflammation to ſpread to neighbouring parts; the ſymptoms of theſe diſeaſes, and even the diſeaſes themſelves, are ſometimes ſo combined, that it is impoſſible to ſay where the chief ſeat of the inflammation lies.

The pulſe, when the concave part of the liver is affected, is often ſmall and feeble; in other caſes it is ſtrong; in all hard. The urine, whether tinged with bile or not, is generally high coloured, the heat and thirſt conſiderable, the mouth dry, and the tongue covered with a white yellowiſh cruſt, which, in the progreſs of the diſeaſe, often aſſumes a dark or even black colour. The ſtrength is reduced by conſtant watching; and delirium is more frequent than in any other phlegmaſia except phrenitis.

In moſt caſes the bowels are conſtipated, in others a diarrhœa comes on, with griping and bilious ſtools, or more rarely the purging is dyſenteric, the effect of irritation from a redundancy of bile, often in a vitiated ſtate.* The bilious and ſlightly bloody ſtools, which frequently attend hepatitis, have been miſtaken for dyſentery; which has given riſe to the opinion of theſe diſeaſes being more frequently combined than they really are.

* See the obſervations of Van Swieten, Com. in Aph. Boerh.

The tendency of hepatitis to reſolution, as in ſimilar caſes, is known by the general mildneſs of the ſymptoms, and their yielding to the proper remedies, particularly, by there being little dyſpnœa, cough, hiccup, vomiting, oppreſſion or debility.

This diſeaſe is often relieved by hemorrhagy, particularly from the noſe and hemorrhoids, ſometimes by ſweat, or an increaſed ſecretion of mucus from the lungs. There have been inſtances in which this ſecretion has been ſo copious towards the termination of hepatitis as to occaſion ſuffocation. A copious flow of high coloured urine, depoſiting a red or whitiſh ſediment, is a favourable ſymptom, particularly if it appears before the fourth day.

When acute hepatitis terminates by reſolution, Lieutaud obſerves, it is generally in three or four days; if it laſt to the ſeventh, ſuppuration is to be expected. The period of ſuppuration, however, is very various, according to the violence of the ſymptoms, the habit of the patient, and the plan of treatment which is purſued. Of all the viſcera, next to the lungs, the liver is moſt liable to ſuppuration.*

When hepatitis terminates by metaſtaſis, the inflammation is frequently tranſlated to the ſpleen or the ſkin, appearing on the latter in the form of eryſipelas.

Reſolution is the only termination of hepatitis which we can conſider as favourable, although ſuppuration is upon the whole leſs fatal here, than in moſt other viſceral inflammations.

We judge of the tendency to this termination by the violence and obſtinacy of the ſymptoms. In moſt phlegmaſiæ unuſual violence of the ſymptoms indicates a tendency to gangrene. Here, however, gangrene rarely occurs.

* Sir J. Pringle on the Diseases of the Army.

As ſoon as ſuppuration takes place, the pain remits, and there is generally a ſenſe of weight and pulſation in the region of the liver, the former being increaſed by lying on the left ſide. Theſe ſymptoms are attended with frequent and irregular ſhiverings, and at length with hectic fever.

In many caſes there is an evident tumor, and the fluctuation may be readily felt. Lieutaud and Burſerius caution us againſt miſtaking the diſtended gall bladder for abſceſs of the liver; from the ſituation of the gall bladder, however, this miſtake cannot eaſily be made.

The danger from ſuppuration in hepatitis depends much on the ſeat of the abſceſs. When it evidently points outwards, there is almoſt always an adheſion of the liver to the parietes of the abdomen, the matter is readily diſcharged by an inciſion, and the patient frequently recovers. Dr. Clark of Dominico* ſays, that of thoſe in whom the matter was diſcharged in this way, two in three were ſaved.

When the abſceſs is ſeated in the more internal parts of the liver, there is no external ſwelling, and the fluctuation can rarely be perceived. In ſuch caſes adheſions are ſometimes formed with the ſtomach or inteſtines, the abſceſs burſting into them, the matter is diſcharged by vomiting or ſtool, and the patient ſometimes recovers. I have ſeen inſtances of a favourable termination in both theſe ways. Dr. Cullen, Dr. Saunders, and others, think it probable, that the matter ſometimes paſſes along the biliary ducts into the inteſtines.

An adheſion is ſometimes formed with the diaphragm, and the abſceſs burſts into the cavity of the thorax, forming em-

* Medical Commentaries, vol. xiv. The wound formed by opening the abscess seldom heals readily, but the health frequently improves rapidly after the operation.

pyema. This is a fatal accident. The patient gradually ſinks under hectic fever and the ſymptoms of hydrothorax. In other inſtances the lungs are involved in the adheſion, and the abſceſs burſts into their ſubſtance, either occaſioning ſuffocation, or when the quantity of matter is ſmall, purulent expectoration, and, if the wound does not ſoon cloſe, (for even this termination is ſometimes favourable) hectic fever and the other ſymptoms of phthiſis.

Purulent expectoration may occur in hepatitis without any direct communication between the liver and lungs, in conſequence of the inflammation ſpreading to the latter, and there either occaſioning abſceſs or a purulent ſecretion from the ſurface of the bronchiæ.*

Sometimes, though more rarely, ſuppuration takes place in the liver without any adheſions being formed, and the matter is diſcharged into the cavity of the abdomen, occaſioning the purulent aſcites.

Hepatitis, though very rarely, ſometimes terminates in gangrene. The tendency to gangrene is known by an unuſual violence of the ſymptoms, rapidly increaſing, and not yielding in any meaſure to the proper remedies. When gangrene has actually ſupervened, the inflammatory ſymptoms ſubſide ſuddenly, cold ſweats ſupervening, and the pulſe becoming weak and fluttering, with conſtant hiccup and cold extremities. There is generally a black matter rejected by vomiting, the ſtools being unuſually offenſive and of a dark colour; fits of ſyncope frequently precede death. Gangrene is here as hopeleſs as in other caſes of viſceral inflammation.

Dr. Cullen does not enumerate ſchirrus of the liver among the terminations of hepatitis, although it has generally been

* See a Paper, by Aaskow, in the Act. Soc. Med. Haf. vol. ii.

ranked among them.* It has however been regarded rather as a conſequence of chronic than of acute hepatitis, and the ſymptoms of the former are ſo equivocal, that its preſence has not always been aſcertained with much accuracy. I have not been able to trace one of many caſes of ſchirrous liver, which I have met with, to acute hepatitis, and the chronic inflammation which ſometimes attends it is probably oftener the conſequence than the cauſe of the ſchirrus. Thoſe who maintain that it ariſes from chronic hepatitis, have not adduced facts ſufficient to eſtabliſh their opinion. It is to be recollected, that more or leſs languid inflammation generally accompanies and ſeems to be occaſioned by a ſchirrous ſtate of the viſcera.

I have already had occaſion to obſerve that there is no other of the viſceral phlegmaſiæ which ſo frequently exiſts without its characteriſtic ſymptoms. It frequently indeed aſſumes forms ſo different from hepatitis, that independently of their conſequences, the inſpection of bodies after death, and the means of cure which have proved moſt effectual, there is nothing to lead us even to a ſuſpicion of their real nature. In ſome inſtances we find it appearing as an irregular remittent, in others as chronic dyſentery†, &c.

* See the observations of Dr. Saunders, and others.

† See the observations of Dr. Girdlestone, and others who practised in tropical climates.

SECT. II.

Of the Cauſes of Hepatitis.

Hepatitis is more frequent in warm, than in cold or temperate climates.

It is moſt apt to attack people of what is called a choleric and melancholic temperament. Adults are more ſubject to it than thoſe under puberty. Dr. Girdleſtone remarks, that while the other ſoldiers were ſeized with it, the drummers and others under age, although equally expoſed to fatigue, the heat of the climate, &c. generally eſcaped.

The ſmall lobe of the liver is moſt ſubject to inflammation, and the outer and convex ſurfaces more than the concave.

The occaſional cauſes of hepatitis are very numerous. Many of thoſe mentioned by authors have been aſſigned, Dr. Cullen thinks, on a very uncertain foundation. He, however, ſeems inclined too much to abridge their number. It muſt be granted, indeed, that many, particularly certain ſuppoſed ſtates of the bile and of the circulation in the vena portarum, ſeem quite hypothetical.

Hepatitis may be excited by all the uſual cauſes of the phlegmaſiæ. Expoſure to the damps of the night in ſultry climates is one of its moſt frequent cauſes.

Among the more peculiar cauſes of hepatitis, may be ranked various cauſes affecting the head. Many phenomena

point out a peculiar ſympathy between the liver and brain. I have already had occaſion to obſerve, that there is no other phlegmaſia affecting the trunck ſo frequently attended with delirium. It is often the conſequence of accidents in which the cranium is injured, and where theſe do not produce hepatitis they often occaſion an unuſual ſecretion of bile and other ſymptoms denoting derangement in the function of the liver. In the ſame way, violent paſſions of the mind, particularly rage and the depreſſing paſſions, and all other irritations of the brain, ſuch as the rays of a vertical ſun falling on the head,* are to be ranked among the cauſes of this diſeaſe. It is alſo in this way, perhaps, that exceſſive fatigue frequently produces it. It ſeems to be from the two laſt cauſes that it is ſo apt to affect ſoldiers in long and fatiguing marches in warm climates.

Various fevers have been ranked among the cauſes of hepatitis, particularly intermitting and remitting fevers, probably from theſe being the moſt frequent in the climates moſt liable to affections of the liver. There is often an unuſual enlargement of the liver, in thoſe who die of the plague.† The ſame obſervation has been made reſpecting the ſcurvy. How far theſe appearances are connected with inflammation has not been aſcertained.

Among the cauſes of hepatitis may be mentioned the concretions ſo frequently formed in the gall bladder and ducts, and a ſchirrus of any part of the liver, or neighbouring part preſſing on the liver Does hepatitis ever ariſe from a vitiated ſtate of the bile? There is reaſon to believe that any cauſe obſtructing the courſe of the bile into the inteſtines,

* See the observations of Dr. Girdlestone, and others.

† Traité de la Peste.

whether it be a biliary calculus ſticking in the ducts, a ſpaſmodic contraction of them, an inflammation communicated to them from the inteſtines or other neighbouring parts, tumors of the liver, or other parts preſſing on them, worms lodged in them, &c. may occaſion hepatitis. In various animals, oxen, calves, and ſheep, ſmall worms have been found in the biliary ducts.* And it would appear, from ſome diſſections, that this has now and then happened in the human body.† But the opinion of Van Swieten, that worms may ſometimes find their way to the liver through the meſenteric artery, ſeems quite hypothetical. The ſame may be obſerved of the opinions which have prevailed reſpecting the manner in which the foregoing cauſes affect the circulation in the liver, concerning which much has been ſaid. If it be admitted that inflammation depends on a debility of the extreme veſſels, the modus operandi of theſe cauſes will be evident.

Dr. Cullen ranks the chronic hepatitis among the occaſional cauſes of the acute, the two forms of the diſeaſe frequently paſſing into each other.

Hypochondriaſis, cholera, and other diſeaſes of the alimentary canal, are ranked among the cauſes of hepatitis. A ſudden ſuppreſſion of the hæmorrhois often occaſions it. There is no other of the phlegmaſiæ, perhaps, ſo frequently excited by the uſe of ſpirituous liquors. Its frequency in India is aſcribed, by Bontius and others, to the general uſe of arrack.

Dr. Girdleſtone mentions bad water among its cauſes; and Dr. Cleghorn remarks, that in a certain part of Minorca, where the water is bad, tumified ſpleens and livers are frequent both in men and brutes. Various other circumſtances

* Van Swieten's Comment. in Aph. Boerhaavii.

† See a dissection, by Nebelius, in Nova Acta Physico Medica, vol. v.

in diet are ranked among the cauſes of this diſeaſe in warm climates. The want of vegetables, great repletion after faſting, long continued thirſt, and bad diet in general. Boerhaave remarks, that it is moſt apt to ſupervene in fevers when the patient has faſted for a long time and indured much thirſt.

Is the frequency of this diſeaſe in warm climates to be at all attributed to the very free uſe of peppers?

Dr. Girdleſtone and others mention the abuſe of mercury among the cauſes of hepatitis.

In a paper, above referred to, Dr. Chiſholm maintains that it is contagious. This, however, is not confirmed by the obſervations of others.

SECT. III.

Of the Treatment of Hepatitis.

THE treatment of hepatitis ſo nearly reſembles that of the phlegmaſiæ we have been conſidering, that it will not be neceſſary to ſpeak of it at length.

When the inflammatory ſymptoms are conſiderable, general blood-letting is neceſſary, and, on account of the great tendency of hepatitis to ſuppuration, it ſhould be employed early. Lieutaud obſerves, that we ſhould ſeldom let blood in this diſeaſe after the fourth day. We ſhall, however, be better guided by the ſtate of the ſymptoms, than by any rule of this kind. When the pulſe is hard and the pain urgent, blood-letting is proper at any period. It is the opinion of Quarin and others, that leſs blood-letting is neceſſary in hepa-

titis, on account of the peculiarity of the circulation in the liver. It is true that blood-letting ought not to be carried to the ſame extent in this diſeaſe, as in gaſtritis and ſome other phlegmaſiæ, not, it would appear, for the reaſon here aſſigned, but becauſe in hepatitis the inflammatory ſymptoms ſeldom run ſo high, and the organ affected is leſs immediately eſſential to life.

Cathartics are employed with great advantage in hepatitis. The mercurial and ſaline cathartics, with much dilution, are particularly recommended. Dr. Girdleſtone remarks, that by ſmall doſes of the neutral ſalts, given at intervals, ſo as to keep up a conſtant catharſis, the acute hepatitis is ſometimes changed into the chronic, a form of the diſeaſe leſs dangerous, provided we are aware of its preſence.

The exhibition of cathartics ſhould not ſuperſede the uſe of copious mild gliſters, which are ſerviceable, as a fomentation, and by removing irritation, and ſupporting the diſcharge from the inteſtines.

It is chiefly in the chronic hepatitis that mercury has been employed to a conſiderable extent.* Dr. Girdleſtone, Dr. Chiſholm, Dr. Clark, of Newcaſtle, and others, however, ſpeak of it as the remedy on which, next to blood-letting, they relied in the acute hepatitis. Nor did they truſt to its cathartic powers, but endeavoured to excite ſalivation even where the fever was moſt conſiderable. According to my experience, the more acute the diſeaſe, the leſs is to be expected from the conſtitutional, and the more from the cathartic effects of mercury.

The diet in hepatitis ſhould be the ſame as in the other phlegmaſiæ.

The local remedies, and the mode of employing them, are alſo the ſame.

* See the observations of Dr. Saunders, and others.

Fomentations are very generally employed in hepatitis, and are often attended with conſiderable advantage. A large quantity of any mild warm fluid received into the ſtomach, ſeems often to give relief on the ſame principle.

The appearance of any of thoſe ſymptoms which prove critical demands attention; when a bilious diarrhœa, comes on it ſhould be encouraged by mild mucilaginous decoctions. If an eryſipelatous inflammation appears externally, and brings relief, we muſt be careful not to repel it. A tendency to hæmorrhois ſhould be encouraged by fomentations, and we are adviſed to increaſe the flow of blood by leeches. In all caſes where there is much cough it is ſerviceable to promote expectoration by the antimonium tartariſatum, and when a moiſture appears on the ſkin, we ſhould encourage it by diluting fluids and mild diaphoretics. When the urine appears turbid, many recommend diuretics, a practice which ſeems chiefly to reſt on hypotheſis. Saline diuretics are often ſerviceable at all periods.

I have already had occaſion to obſerve that the acute hepatitis ſometimes terminates in the chronic. When this happens, a careleſs obſerver may believe the patient reſtored to health. After the inflammatory ſymptoms have diſappeared, therefore, it is neceſſary to examine him with care. We muſt feel whether there be any hardneſs, ſwelling, or tenderneſs on preſſure, remaining in the hepatic region; enquire whether there be pain or itching in the right ſhoulder, or anxiety, oppreſſion, and a ſenſe of fullneſs after eating; and obſerve if the ſkin, eyes, fæces, and urine, have aſſumed their natural colour.

There are few diſeaſes for ſometime after which, it is more neceſſary to avoid the exciting cauſes.

CHAP. XVII.

Of Splenitis, Nephritis, Cystitis, *and* Histeritis.

I shall not enter into any particular conſideration of the four genera which ſucceed Hepatitis in Dr. Cullen's Noſology, the Splenitis or inflammation of the ſpleen, Nephritis or inflammation of the kidney, Cyſtitis or inflammation of the urinary bladder, and Hiſteritis or inflammation of the womb. A few words will be ſufficient to make the reader acquainted with the ſymptoms which characteriſe theſe diſeaſes, and their cauſes and treatment are ſo ſimilar to thoſe of the diſeaſes we have juſt been conſidering, that nothing need be ſaid of them.

The firſt, Splenitis, is defined by Dr. Cullen,

"Pyrexia; hypochondrii ſiniſtri tenſio, calor, tumor, et "dolor preſſu auctus; abſque ſignis nephritidis."

It was obſerved above, that this diſeaſe has ſometimes been miſtaken for pleuriſy. In the exquiſitely formed ſplenitis, the pain is dull and the febrile ſymptoms are not very urgent. When theſe circumſtances, with the ſymptoms juſt mentioned, are well-marked, it may eaſily be diſtinguiſhed. The difficulty of the diagnoſis ariſes from the obſcurity of the office of the ſpleen; in conſequence of which an inflammation of this organ is only attended with apparent derangement in the functions of neighbouring parts.

There is a chronic ſplenitis analogous to the chronic hepatitis; collections of matter having been found in the ſpleen where no inflammatory ſymptoms had appeared.

Dr. Cullen defines Nephritis,

" Pyrexia; dolor in regione renis, ſæpe ureteris iter ſe-
" quens; mictio frequens urinæ, vel tenuis decoloris, vel ru-
" berrimœ; vomitus; cruris ſtupor; teſticuli ejuſdem late-
" ris retractio aut dolor."

He makes two ſpecies of nephritis, the idiopathic and ſymptomatic, the former ariſing from the cauſes of inflammation in general, the latter generally from calculi lodged in the kidney or ureter. The diſeaſe with which acute nephritis is moſt liable to be confounded, is the lumbago, eſpecially when the muſcles lodged within the pelvis partake of the affection. In general, however, they may be readily diſtinguiſhed by the change in the appearance of the urine, and by the nauſea and vomiting which frequently attend nephritis; by there being very rarely any ſtupor of the leg, and little or no affection of the teſticle in lumbago, by there being either no fever in the latter, or leſs in proportion to the ſeverity of the local ſymptoms; but chiefly by the pain in nephritis being much leſs increaſed by muſcular exertion than in lumbago. Nephritis is diſtinguiſhed from the ſymptoms occaſioned by a ſtone in the pelvis of the kidney or in the ureter, which has not produced inflammation, by their being unattended by fever.

Clyſters are particularly ſerviceable in nephritis. The application of bliſters, Dr. Cullen obſerves, is hardly admiſſible. If they are uſed, great care muſt be taken, as much as poſſible to prevent the abſorption of the cantharides.

Nephritis frequently terminates in ſuppuration, and ul-

ceration ſometimes takes place in the kidney without rapidly affecting the health, which Dr. M'Bride, with great probability, attributes to the urine conſtantly waſhing out the matter.

The Cyſtitis, or inflammation of the bladder, is defined by Dr. Cullen,

"Pyrexia; hypogaſtrii tumor et dolor; mictio frequens "dolorifica; vel iſchuria; teneſmus."

The idiopathic cyſtitis is a very rare diſeaſe. It is rarely idiopathic, very frequently ſymptomatic of calculi lodged in the bladder.

Dr. Cullen defines Hiſteritis,

"Pyrexia; hypogaſtrii calor, tenſio, tumor, et dolor; os "uteri tactu dolens; vomitus."

It is common for writers to treat of the inflammation of the pancreas and omentum as diſtinct diſeaſes. When, however, the reader reflects on the ſituation of theſe parts, and how readily the organs in the neighbourhood of thoſe affected with inflammation partake of it, or ſympathiſe with the diſeaſed part even where they do not partake of it, he will eaſily believe that inflammation of the pancreas or omentum is not to be diſtinguiſhed from ſome of the foregoing phlegmaſiæ.

The various enticular and viſceral phlegmaſiæ have now been treated of. The articular only remain to be conſidered.

CHAP. XVIII.

Of the RHEUMATISM.

RHEUMATISM, like hepatitis, is either acute or chronic. It is of the former only I am to ſpeak here.

It is defined by Dr. Cullen,

"Morbus ab externa; et plerumque evidente cauſa; "pyrexia; dolor circa articulos, muſculorum tractum ſe- "quens, genua et reliquos majores, potius quam pedum vel "manuum articulos, infeſtans, calore externo auctus."

SECT. I.

Of the Symptoms of Acute Rheumatiſm.

THE ſeat of the pain is various, ſometimes it is confined to one joint, more frequently it attacks ſeveral at the ſame time. For the moſt part it is not confined to the joints, but ſhoots along the muſcles, ſo that we talk of the rheumatiſm in the leg, or thigh, as well as in the hip or knee. The muſcles of the head, neck, and trunk are alſo liable to it. It generally, as mentioned in the definition, attacks the larger joints; the ſhoulder, elbow, hip, and knee; the wriſts are frequently

much affected. It has received various names according to the different parts affected; in the muſcles of the neck, it has been called torticollis; in thoſe of the cheſt, baſtard pleuriſy, which I have had occaſion to notice; in the muſcles of the loins, it has been termed lumbago; in thoſe of the hip, iſchias or ſciatica. When the rheumatiſm is confined to any one of theſe parts, it is generally unaccompanied with fever, ſo that the foregoing terms expreſs ſpecies of the chronic, not acute, rheumatiſm. Vogel obſerves, that in young people the rheumatiſm moſt frequently attacks the head, breaſt, ſcapulæ, ſhoulders, and hands; in adults and old people, the back, hips, and thighs.

Rheumatic pains are much increaſed on the ſlighteſt motion requiring the action of the muſcles affected, which is, perhaps, their beſt diagnoſtic, and ſhould form part of the definition of acute as well as chronic rheumatiſm, to which Dr. Cullen confines it. It is not uncommon for acute rheumatiſm to ſeize at the ſame time on almoſt every joint of both the upper and lower extremities; the patient then lies on the back with the limbs extended, enduring extreme pain, and unable to perform the leaſt motion.

When the pain remains fixed in particular joints, we expect a more obſtinate diſeaſe than when it moves from one to another, which is uſually the caſe, ſometimes repeatedly attacking the ſame joint.

The pains are moſt ſevere and moſt apt to ſhift their place in the night time. Sometimes they regularly abate in the morning with a gentle ſweat, and ſuffer a conſiderable exacerbation towards evening, the patient remaining tolerably eaſy during the day. At other times the remiſſions are very imperfect, and the pains in ſome caſes are as ſevere in the day as in the night.

After the pains have continued for ſome time, a degree of

ſwelling appears in the parts moſt affected, and ſometimes the whole body becomes ſwelled and tenſe. * With the ſwelling there is generally ſome degree of rednefs, and the part is painful to the ſlighteſt touch. Sometimes even the weight of the bed-clothes is intolerable, ſo that it is neceſſary to ſupport them over the patient's body.

The rednefs and ſwelling generally bring ſome relief to the pain. They ſeldom, however, remove it, or prevent its returning to the part with as great violence as before. The pains, for the moſt part, are the laſt ſymptom which leaves the patient. They often begin to abate about the eighth or tenth day, but generally continue with more or lefs ſeverity to the thirtieth or fortieth. Sometimes they continue for months or even years. It is very uncommon for the pain to diſappear before the twentieth day.

The foregoing ſymptoms are, from their commencement, attended with fever, the pulſe being frequent, full, and hard. Sometimes the fever, ſometimes the pain, is the firſt ſymptom, but the one never continues long without being accompanied by the other. The former generally begins with chills, ſucceeded by much heat and thirſt. It is proportioned to the violence of the local ſymptoms. When the pain is not very ſevere, and confined to a few parts, the fever is ſlight. When it is ſevere, and felt in many parts, the fever is more conſiderable, and it is moſt ſo when the pains extend over the whole body. Like the pain, it generally ſuffers an exacerbation in the evening, and a remiſſion towards morning, eſpecially when a degree of ſweat comes on at this time.

The face, particularly during the exacerbations, is red and ſomewhat ſwelled, the urine high coloured, ſometimes with-

* Anni Medici of Stork.

out ſediment, at other times, particularly in the morning, and when there is much ſweating, it depoſites a ſediment of a white or reddiſh colour, and the patient complains of ardor urinæ.

Nauſea and vomiting rarely occur. The ſame may be ſaid of delirium; there is ſometimes a degree of coma. The pain and fever generally prevent ſleep during the firſt days.

I have already had occaſion to obſerve, that the febrile ſymptoms abate ſooner than the local; they are rarely protracted beyond a fortnight or three weeks. While the fever abates, the pains generally become leſs violent, and are leſs apt to change their place.

Rheumatiſm differs from the phlegmaſiæ we have been conſidering, in very rarely terminating in any other way than by reſolution. Some authors, indeed, mention caſes in which abſceſſes were formed. It does not appear, however, whether or not in theſe caſes the rheumatiſm was complicated with other diſeaſes. Nor does it frequently happen that collections of effuſed fluid take place in the pained part. Stork, indeed, influenced probably by his hypotheſis, obſerves, that if the rheumatic fever ceaſe, and the ſwelling of the limbs ſubſide ſuddenly, the matter formerly diſperſed over the whole body is collected in one place, and forms large lymphatic tumors, which generally occupy the knees, hips, groins, or ſhoulders. This muſt be rare; for Dr. Cullen remarks, "if we may be allowed to ſuppoſe that "ſuch effuſions are frequent, it muſt alſo happen that the "effuſed fluid is commonly re-abſorbed, for it has ſeldom "happened, and never indeed to my obſervation, that con-"ſiderable or permanent tumors have been produced, or "ſuch as required to be opened, or have the contained fluid "evacuated."

Acute rheumatiſm ſeldom terminates by a critical evacua-

tion. It is not uncommon for a ſweat to break out, continue for a day or two, and occaſionally to re-appear; but it is often partial, ſeldom flows freely, and ſtill more rarely brings permanent relief. The reader, indeed, will find a ſweat mentioned by Lieutaud and others as critical in this diſeaſe; and, upon the whole, perhaps, although rarely, it is more frequently ſo than any other ſymptom. Unleſs it exhauſts the ſtrength without bringing relief, it is always to be regarded as a favourable ſymptom.

The pains have ſometimes remitted on the appearance of an eruption on the ſkin. Various hemorrhagies, the epiſtaxis hemorrhois and others, and the menſtrual diſcharge, have ſometimes brought relief. "A diarrhœa," Dr. Millar obſerves, "is an unuſual ſymptom in acute rheumatiſm; "when it happens, the pain generally abates, and the fever "ſometimes degenerates into one of the putrid malignant "kind."

The acute rheumatiſm often terminates in the chronic.

The prognoſis is generally good. Danger is only to be apprehended when the excitement is very violent, and does not yield to the proper remedies.

As the diſeaſe is uſually protracted for a conſiderable length of time, and anti-inflammatory meaſures make the chief part of the treatment, it often leaves the ſtrength much exhauſted. Irregular pains, attended with a dry cough and night ſweats, are ſometimes the conſequence. For the moſt part, however, they are readily removed.

With regard to the diagnoſis, the diſeaſe which has been moſt frequently confounded with rheumatiſm, is that we are next to conſider, the gout. The ancients, indeed, ſeem to have made no diſtinction between them, deſcribing them both under the common name of arthritis. So little did they

attempt any diagnoſis, that Aritæus ſays of the arthritis, it is a general pain in all the joints; in the feet, called podagra; in the hips, iſchias; in the hands, chiragra. Trallis affirms, that the term rheumatiſm was wholly unknown to them. It is uſed by Celius Aurelianus, and ſome others; who do not apply it however in the ſame way in which we do. Even to this day, in many parts of Europe, the diagnoſis between rheumatiſm and gout is but ill underſtood. The rheumatiſm has alſo been confounded with bilious pains, and the pains of ſcurvy and lues venerea, from which, however, it may for the moſt part be readily diſtinguiſhed, by the accompanying ſymptoms of the latter diſeaſes, and the diagnoſtic ſymptoms of rheumatiſm above pointed out; bilious, are generally leſs fixed than rheumatic, pains, and venereal pains are generally moſt felt about the middle of the long bones. I have already had occaſion to obſerve, that rheumatiſm is ſometimes confounded with nephritis, and to notice the ſymptoms by which they are diſtinguiſhed.

It is ſo difficult to diſtinguiſh the ſymptoms occaſioned by a calculus in the kidney without inflammation, and the chronic rheumatiſm ſeated in the muſcles of the loins, that even Boerhaave was deceived in his own caſe. They are chiefly to be diſtinguiſhed by the vomiting, frequent and painful micturition, and ſtupor of the inferior extremities, which generally attend the former, and the great increaſe of pain which attends the action of the muſcles of the loins in the latter.

Fevers of various kinds, we have ſeen, are accompanied with ſevere pains of the back and limbs, which are often with difficulty diſtinguiſhed from acute rheumatiſm, particularly when the excitement runs high. Neither Hippocrates nor Celius Aurelianus, Dr. Millar obſerves, have diſtin-

guiſhed rheumatiſm from remitting fevers. The diagnoſis in this caſe is to be collected from the relative violence of the ſymptoms, and the ſeat and kind of the pain. In fever, the general ſymptoms are more conſiderable compared with the pain, which is not particularly fixed in the joints, and the former do not ſeem to increaſe and abate with the latter, which is uſually the caſe in acute rheumatiſm; in which, as in the other phlegmaſiæ, the general appears to ariſe from the local affection. The pains which attend fever are ſeldom much increaſed on motion, and never as much as rheumatic pains are.

Ballonius, in his Treatiſe de Rheumatiſmo et Pleuritide Dorſali, is the firſt author who has accurately diſtinguiſhed rheumatiſm.

Both Sir John Pringle and Dr. Millar ſay they have been able to find no earlier account which is at all accurate.

SECT. II.

Of the Cauſes of Acute Rheumatiſm.

All except the very young or very old are ſubject to acute rheumatiſm. Thoſe between the age of puberty and thirty-five, Dr. Cullen obſerves, are moſt ſubject to it.

The ſame habit prediſpoſes to rheumatiſm as to other inflammatory diſeaſes. The plethoric are frequent ſubjects of it; but I have already had occaſion to obſerve, that the ten-

dency to inflammation, is not confined to the plethoric, and to deſcribe the other ſtates of the habit which ſeem to prediſpoſe to it. It has been remarked of rheumatiſm, indeed, that the cachectic, and according to Ballonius, thoſe who have laboured under putrid fevers, are peculiarly its ſubjects. Theſe obſervations, however, apply only to chronic rheumatiſm.

Rheumatiſm is more a diſeaſe of cold than of warm countries, and in the former it is moſt common in the colder ſeaſons. Sir John Pringle ranks it among the winter diſeaſes. It was ſeldom common in the army till the commencement of this ſeaſon. It is in the beginning and towards the end of winter, however, that it is moſt frequent, for, like the other phlegmaſiæ, it is rather excited by viciſſitudes of temperature, than the uniform application of cold. All partial application of cold is particularly apt to excite it, eſpecially if attended with damp, and applied to the extremities, where the circulation is moſt languid.

The various cauſes of ſudden plethora above enumerated often prove exciting cauſes of rheumatiſm.

It is remarkable that Sydenham ranks the uſe of the bark among the cauſes of this diſeaſe. This appears to be only one of the many prejudices which at one time prevailed reſpecting this medicine.

SECT. III.

Of the Treatment of Acute Rheumatiſm.

THIS diſeaſe, we have ſeen, differs from moſt of the other phlegmaſiæ, in not being apt to terminate in ſuppuration or

gangrene, on which, and the ſeat of the inflammation, what is peculiar in its treatment depends.

The general treatment in acute rheumatiſm reſembles that of no diſeaſe which has been conſidered, ſo much as the ſynocha.

In moſt of the phlegmaſiæ, particularly thoſe laſt treated of, the danger of ſuppuration and gangrene is ſuch, that to prevent theſe terminations we are often obliged to riſk a greater degree of debility than there is any good reaſon for riſking in the caſe before us. It is not ſo much our object here by general evacuations to remove the local ſymptoms as to allay the general excitement. The preſence of the inflammatory affection, however, both by keeping up the excitement and aſſuring us that the diſeaſe will not terminate in typhus, properly ſo called, indicates a freer uſe of antiphlogiſtic meaſures than is proper in ſimple ſynocha. The general excitement for the firſt days is often ſuch as warrants even repeated blood-letting.

But if the general excitement does not warrant it, we are not to employ it for the purpoſe of relieving the pain. Sydenham in his early practice ſeems to have employed blood-letting with this view, but he confeſſes that experience taught him that he had uſed it too freely in this diſeaſe. And although Dr. Cullen recommends more copious blood-letting in acute rheumatiſm than ſeems fully warranted by the experience of others, he obſerves, "that attempting a cure by large and repeated blood-"letting is attended with many inconveniences." Upon the whole, general blood-letting is ſeldom proper after the fifth or ſixth day, and at no time when the fever is abating, although the pains ſhould become worſe. Besides the uſual bad effects of much blood-letting it ſeems often to render the diſeaſe more obſtinate, and ſometimes to

change it into the chronic form. Sydenham thought it of consequence in rheumatism to let blood from the side most affected, which ought surely to be preferred.

Catharsis is much recommended in acute rheumatism, and, as in almost all febrile diseases, is to a certain extent highly beneficial. As it tends less to debilitate than blood-letting, it may be used more freely. Great excitement, however, is to be reduced rather by blood-letting, than cathartics. They are less powerful in diminishing excitement, and when many joints are affected the frequent action of the bowels is attended with great pain and inconvenience. The mild saline or mercurial cathartics are the best.

Emetics are seldom employed in rheumatism; some writers think that they are used with advantage after the excitement is moderated by blood-letting, but nauseating doses appear to be preferable.

The great advantage obtained from sweating in chronic rheumatism, has induced practitioners to rely upon it in the acute form of the disease. But here we must avoid heating medicines and external warmth, means employed with great advantage in the former case. There are few diaphoretics more powerful than nauseating doses of emetics; and as these at the same time tend otherwise to allay the febrile symptoms, they are well adapted to the case before us. They likewise frequently answer the purpose of cathartics.

Many other medicines have been recommended with a view to promote perspiration, and all are said to have proved beneficial. Among the chief of these is nitre, which by some practitioners has been given in very large doses. Dr. Brocklesby * seems to have trusted chiefly to this medicine;

* His Account of the Diseases of the Army.

he gave it in very large quantity. Dr. Brocklesby's observations deserve the attention of those who practice in similar circumstances. In smaller doses it is useful in all cases, when the excitement is considerable.

Camphor has been very generally employed as a diaphoretic in acute rheumatism. Sir John Pringle gave it in combination with the carbonate of ammonia. He sometimes gave the latter without the camphor. Guaiacum and opium have also been recommended with the same view. The excellent effects of guaiacum in the chronic rheumatism seems to have led to its use here. Camphor is a feeble medicine, although it seems by its anodyne quality sometimes to add to the good effects of others. Ammonia and guaiacum are too heating while there is much fever.

Respecting the use of opium in this disease there is much difference of opinion. It was observed, that opium appears to be more beneficial in the phlegmasiæ, the less proportion the general, bear to the local, symptoms. As in rheumatism, the inflammation is more external, the general, bear a less proportion to the local, symptoms, than in the visceral phlegmasiæ; and in many cases, we find the pains very severe when the general affection of the system is by no means so. As far as I can judge from my own experience, it is in these cases that opium is most beneficial. The tendency to perspiration in rheumatism seems also often to obviate the bad effects it is apt to produce in the phlegmasiæ. On this account it is generally found adviseable to use it in combination with those medicines which direct its operation to the skin, particularly antimony and ipecacuanha. These, especially the combination of opium and ipecacuanha, appear to be of all the means we possess the most powerful in allaying the pain, when the febrile symptoms are moderate.

In many cases of chronic rheumatism it almost uniformly

ſucceeds, if it be given in ſuch doſes as to render the perſpiration general and profuſe for ſeveral days; great care being taken that the ſweating ſhall abate gradually, and that the patient ſhall not ſoon after it be expoſed to cold. I have found the compound tincture of guaiacum an excellent means of ſupporting the inſenſible perſpiration, and defending the patient againſt the effects of cold after ſuch ſweats.

It is not to be overlooked, that when ſweating does not ſoon relieve the ſymptoms, it often fails altogether, and perſevering, under theſe circumſtances, in exciting it, often, like other profuſe evacuations, occaſions the acute, to degenerate into the chronic, form of the diſeaſe.

Opium given alone and at an early period of the acute rheumatiſm, eſpecially when the fever is conſiderable, often does harm. Sydenham obſerves, that more blood-letting was neceſſary in thoſe caſes where opium was uſed; and Stork remarks, that when we attempt to procure ſleep by paregorics, the patient becomes reſtleſs and giddy, troubled with diſtreſſing dreams and ſtarting during ſleep, which, inſtead of refreſhing, ſeems to fatigue him, the pulſe becoming frequent, unequal, and contracted. Van Swieten, Dr. M'Bride, Dr. Brocklesby, and others, make ſimilar obſervations.

By ſome practitioners, opium has been given after evacuations, with a view to reſtore the impaired ſtrength. Sydenham gave it after the operation of cathartics. The Peruvian bark has been found eminently ſerviceable towards the decline of the diſeaſe, eſpecially when the fever returns at intervals, aſſuming more or leſs of the form of an intermittent.* Some have recommended the Peruvian bark, Dr. Cullen obſerves, at an earlier period, but it is proper in thoſe

* Van Swieten's Comment. Dr. Millar's Diseases of Great Britain, &c.

caſes only, in which the phlogiſtic diatheſis is much abated, and where at the ſame time the exacerbations of the diſeaſe are manifeſtly periodical.*

Mercury has been recommended in acute rheumatiſm, but, except as a cathartic, it ſeems of little uſe in this form of the diſeaſe. In the chronic rheumatiſm it is ſometimes of ſervice, but I believe much leſs frequently than has been ſuppoſed, the pains in many caſes ſuppoſed rheumatic, being bilious or venereal.

The diet in acute rheumatiſm ſhould be the ſame as in other inflammatory diſeaſes, mild and diluting.

The temperature of the patient's room ſhould be as uniform as poſſible and rather cool. Some think that he ſhould be laid in blankets in order to promote perſpiration and prevent taking cold. This is often very neceſſary in chronic rheumatiſm, where profuſe ſweating is more frequently employed, and the patient is more ſuſceptible of cold.

Among the local remedies blood-letting holds the chief place. While the pains are general, we cannot employ local blood-letting. It is impoſſible by bleeding from one joint to relieve the reſt. It is after the fever remits, when the pains ſtill continue ſevere, and fix themſelves chiefly in a few of the joints, attended with ſome degree of redneſs and ſwelling, that it is of moſt ſervice.

Although bliſters are leſs proper while the inflammation is conſiderable, after it has been to a certain degree reduced, their effects will often be found more permanent. The ſame obſervation applies to them as to local blood-

* It has been lately recommended at the very commencement of the disease, and even in cases where the pulse is strong and hard. From the trials I have made I am inclined to subscribe to Dr. Cullen's opinion, that its exhibition ought not to be attempted under these circumstances.

letting. It is when the pains are chiefly confined to a few joints that they are to be employed; at an early period indeed, when the pains are general and the pulſe hard, they do more harm than good.

Rubefacients often relieve the pains, but when thus driven from one joint, they are apt to attack another. Fomentations are alſo of ſervice after the fever has abated. The actual cautery has been employed, and is ſtill in certain caſes of chronic rheumatiſm recommended by ſome practitioners on the Continent. It is ſaid to be a very effectual remedy, when the diſeaſe is obſtinately fixed in particular joints.

What has been ſaid on former occaſions reſpecting the encouragement of the ſymptoms found critical in the phlegmaſiæ, is applicable here. If a tendency to ſweating ſhews itſelf, it ſhould be encouraged by every means that does not tend to increaſe the febrile ſymptoms. We are alſo to favour any tendency to hemorrhagy If an eruption brings conſiderable relief, we may for a day or two diſcontinue the evacuating plan; but if the eruption appears without bringing relief, it ſhould occaſion no change in the mode of treatment. When rheumatiſm terminates in any kind of ulceration, we muſt not attempt to heal it too ſuddenly.

CHAP. XIX.

Of the Gout.

There are few diſeaſes on which more has been written, than the gout. A thouſand treatiſes have promiſed an eaſy

explanation of its phenomena, and certain means of cure; yet it still defies our reasonings and our art. It is true indeed, that since the revival of literature, more careful observation has greatly improved both its history and treatment; but the latter is still extremely defective, and all our ideas respecting its nature, are as unsatisfactory as the neglected hypotheses of the ancients.

Dr. Cullen defines the Gout,

" Morbus hæreditarius, oriens sine causa externa evidente, " sed præeunte plerumque ventriculi affectione insolita; " pyrexia; dolor ad articulum, et plerumque pedis polici, " certe pedum et manuum juncturis, potissimum infestus; " per intervalla revertens, et sæpe cum ventriculi, vel alia- " rum internarum partium, affectionibus alternans."

It might be objected to this definition, that it does not very accurately include all the varieties of gout; it would be difficult, however, to give a better definition of so varied a disease. It points out its most striking features.

Dr. Cullen divides the gout into four species, the regular, atonic, retrograde, and misplaced, which seem with sufficient accuracy to include its different forms. Other writers have divided it into more or fewer varieties.

He defines his first species,

" Podagra cum inflammatione artuum satis vehementi, per " aliquot dies perstante, et paulatim cum tumore, pruritu, et " desquamatione partis, recedente."

The atonic gout is defined,

" Podagra cum ventriculi vel alius partis internæ atonia, et " vel sine expectata aut solita artuum inflammatione, vel " cum doloribus artuum lenibus tantum et fugacibus, et cum " dyspepsia vel aliis atoniæ symptomatibus subito sæpe alter- " nantibus."

The retrograde gout he defines,

"Podagra cum inflammatione artuum ſubito recedente, et "ventriculi vel allius partis internæ atonia mox inſecuta."

His fourth ſpecies, the miſplaced gout, he defines,

"Podagra cum partis internæ inflammatione, vel non præ-"greſſa, vel prægreſſa et ſubito recedente, inflammatione "artuum."

It will be proper to conſider the ſymptoms of each of theſe ſpecies ſeparately.

SECT. I.

Of the Symptoms of Regular Gout.

SYDENHAM has given ſo full and accurate an account of the regular gout, that it is impoſſible to make any conſiderable additions to it. Later writers indeed have generally given a literal tranſlation of it; and thoſe who profeſs to detail the ſymptoms of gout from their own obſervation, have added little or nothing to Sydenham's account of this diſeaſe, and often uſe his very expreſſions. This obſervation applies even to Dr. Cullen's account of it. The following account of the regular gout, therefore, is to be regarded as Sydenham's interſperſed with the few additions furniſhed by later obſervation.

The gout ſometimes comes on very ſuddenly, particularly in its firſt attacks. In general, however, the inflammation of the joint is preceded by various ſymptoms indicating a want of vigour in different parts of the ſyſtem. The patient is incapable of his uſual exertions either of mind or body; becomes

languid, liſtleſs, and ſubject to ſlight feveriſh attacks, eſpecially in the evening, in which ſhivering often alternates with fluſhings of heat. He frequently complains of pains in the head, and coldneſs of the extremities. The appetite is impaired, with the uſual ſymptoms of dyſpepſia. The patient complains of heavineſs after meals, which often becomes a diſturbed kind of ſleep, to which he is more or leſs ſubject at other times, particularly when the mind is ſlightly engaged while the body is at reſt. He is never refreſhed by this ſleep, but remains languid and uneaſy; he becomes ſubject to flatulence, acid eructations, heart-burn, ſpaſms of the ſtomach, thirſt, vitiated taſte, nauſea and vomiting. The bowels are ſeldom regular, being either conſtipated, or too much relaxed. The mind, at this period, is generally irritable, anxious, and alarmed at the leaſt appearance of danger.

Theſe ſymptoms are often accompanied by others which more particularly preſage the approaching fit, a deficiency of perſpiration in the feet, and their veins appearing more diſtended than uſual, cramps of the feet and legs, numbneſs and a ſenſe of pricking in them, or a ſenſation as if cold water were poured upon them, which is ſometimes felt in other parts of the body, particularly in the back, and is deſcribed as different from the ſhivering which attends febrile attacks.

The duration of theſe ſymptoms previous to the fit, is various; ſometimes only a day or two, at other times many weeks. It is a very general obſervation, that the day preceding the fit, the appetite is greater than uſual.

The fit ſometimes makes its attack in the evening, more commonly about two or three o'clock in the morning. The patient goes to bed free from pain, and is awakened about this time by a very acute pain, generally in the firſt joint of the great toe. Sydenham, who was much afflicted with the gout, obſerves, that the pain often reſembles that of a diſlo-

cated bone, with a ſenſation as if tepid water were poured on the membranes of the part. It ſometimes extends itſelf over all the bones of the tarſus and metatarſus, reſembling the pain occaſioned by the tenſion or laceration of a membrane; at other times it occaſions a ſenſe of weight, and conſtriction of the part, which at length becomes ſo ſenſible, that the patient cannot endure the weight of the bed-clothes upon it, or the ſhaking of the room from a perſon walking acroſs it.

At the commencement of the pain, a cold fit is more or leſs perfectly formed; which, as the pain increaſes, is ſucceeded by heat and other ſymptoms of fever. The pain and fever increaſe, with much reſtleſsneſs, till about the middle of the ſucceeding night; after which they gradually abate, and in the moſt favourable caſes there is little either of the pain or fever twenty-four hours after their firſt appearance.

The patient, as ſoon as he obtains ſome relief from pain, generally falls aſleep, a gentle ſweat comes on before he awakes, and the part, which the pain occupied, becomes red and ſwelled.

In moſt caſes, however, the fit is not over, for the pain and fever return in the ſucceeding night with leſs violence, and continue to do ſo for ſeveral nights, becoming leſs ſevere till they ceaſe.

Such is a ſimple fit of the gout. But it often happens that after the pain has abated in one foot, it attacks the other, where it runs the ſame courſe, and in thoſe who have laboured under repeated attacks of the diſeaſe, the foot firſt attacked is often ſeized a ſecond time, as the pain in the other ſubſides, which is again attacked in its turn, and they are thus alternately affected for a conſiderable length of time. In other caſes it ſeizes on both feet at the ſame time.

In ſtrong people, Sydenham obſerves, the whole fit, even

although it attacks both feet, is generally finiſhed in about fourteen days. In the aged, and thoſe who have been long ſubject to the gout, it generally laſts about two months; and in thoſe who are much debilitated, either by age or the long continuance of the diſeaſe, till the ſummer heats ſet in.

During the fit the bowels are generally coſtive, the urine is ſcanty and high-coloured, and depoſites a copious red ſediment, particularly during the firſt days. Through the whole fit there is a want of appetite and ſenſe of oppreſſion, with rigors in the evening. While it is going off, the patient often complains of an intolerable itching in the parts which the pain occupied, particularly between the toes, from which, and frequently from the whole foot, there is a deſquamation of the cuticle.

A fit of the gout for the time, improves the health. It leaves the appetite, digeſtion, and ſpirits, unuſually good, ſo that many declare, that they willingly endure the pain for the good health and ſpirits which ſucceed it.

The firſt attacks of the gout are generally at long intervals, for the moſt part three or four years; at length they occur annually; in thoſe who have long been ſubject to it, twice a year, and at laſt ſeveral times during the autumn, winter, and ſpring. Upon the whole it may be remarked, that the more tedious the fits of the gout, the leſs ſevere is the pain, the more urgent are the dyſpeptic and other atonic ſymptoms, the longer is the duration of the fit, and the ſooner it returns.

The foregoing is the only form of gout which Sydenham admitted to be regular. When it left the feet, or attacked other parts at the ſame time, he believed the natural courſe of the diſeaſe to be diſturbed by debility or ſome leſs evident cauſe. Dr. Cullen, and other later writers, however, have ranked, as varieties of regular gout, all caſes which run the courſe here

deſcribed, whether the pain be ſituated in the feet or other parts of the extremities.

After frequent returns of the gout, it begins to ſeize upon the joints of the hand, and at length the larger joints; and when it attacks the knee and elbow it ſometimes occaſions conſiderable ſwelling without any change of colour in the ſkin. As in the ſmaller joints, however, the ſkin often becomes inflamed. The pain ſometimes attacks ſome of theſe joints and the feet alternately, and ſometimes, though not ſo often, ſome of the joints of both the upper and lower extremities at the ſame time. When the gouty tendency is very great, almoſt every joint of the body ſuffers; the pain when it leaves one, immediately fixing in another. The patient is then free from the diſeaſe only for a ſhort time in the ſummer, ſo that the uſual fit may be ſaid to laſt for eight or ten months.

In the firſt attacks, the joints ſoon recover their ſtrength and ſuppleneſs, but after the diſeaſe has recurred frequently, and the fits are long protracted, the joints remain weak and ſtiff, and at length loſe all motion. Theſe effects are increaſed by the formation of concretions, which are often thrown out by ſuppuration, occaſioning ulcers that ſometimes prove obſtinate. The concretions, however, are not formed in the joint, but for the moſt part immediately under the ſkin.

I have already had occaſion to obſerve, that as the paroxyſms are protracted, the dyſpeptic and other ſymptoms of debility increaſe, while the pains become leſs ſevere. When the fits are protracted for the greater part of the year. the patient is hardly ever free from ſuch ſymptoms, which, when there is no pain, or only very ſlight and wandering pains, form the ſpecies of gout we are next to conſider.

Moſt people who have ſuffered long from gout are more or leſs troubled with calculous complaints, and the nephritic often alternate with the gouty, paroxyſms.

SECT. II.

Of the Symptoms of Irregular Gout.

THE term irregular has been employed to expreſs every form of gout except that we have juſt been conſidering, ſo that under it are comprehended Dr. Cullen's three remaining ſpecies. Of theſe the atonic is the moſt important.

We were not ſupplied ſo early with an accurate account of theſe ſpecies of gout, as of the regular form of the diſeaſe. Sydenham deſcribes them with much leſs preciſion. The different forms of irregular gout are ſo various and deceitful, that an accurate account of them could only be expected from the united efforts of many.* To ſave repetition, I ſhall, along with the ſymptoms of the irregular forms of gout, notice the cauſes which diſpoſe it to aſſume theſe forms.

To enter fully on a detail of the ſymptoms which appear in what is called atonic gout, would be to give thoſe of a large proportion of all the diſeaſes we are ſubject to, for there are hardly any which appear in a gouty habit that do not ſhew

* The reader will find an excellent account of irregular gout, in two treatises published by Dr. Musgrave, De Arthritide Symptomatica and Arthritide Anomale.

ſome connection with the habitual diſeaſe. It will be ſufficient to enumerate its more ſtriking features.

The ſubjects of atonic gout are generally ſuch as have for a conſiderable time laboured under regular attacks of the diſeaſe; this, however, is not univerſally the caſe. In ſome conſtitutions the gout ſoon begins to aſſume the atonic form. When this form appears in thoſe who have never ſuffered from regular attacks, it is very difficult to determine its nature, unleſs the affection of the internal part alternate with pains of the joints.

The moſt common forms of atonic gout may be divided into three claſſes, as it attacks the abdominal or thoracic viſcera, or the encephalon.

The morbid affections of the ſtomach, which have been mentioned as often preceding regular gout, are the moſt common ſymptoms of the atonic. But in this form of the diſeaſe they riſe to a greater height, and are often attended with immediate danger. The patient is diſtreſſed with flatulence, nauſea, vomiting, ſevere pains in the region of the ſtomach, &c. which often very ſuddenly prove fatal. He is ſometimes haraſſed with cramps in various parts of the body, particularly the trunk and arms, which are generally relieved by a diſcharge of wind from the ſtomach. The debility is often extreme, the pulſe ſometimes intermitting, the mind anxious, iraſcible, and timid.

There are few diſeaſes more deceitful than what has been termed the gout in the ſtomach. Sometimes, indeed, the pain is excruciating, and the patient dies in extreme agony. But in many inſtances he expires when the ſymptoms are not different from thoſe which in ordinary dyſpeptics might be pronounced free from danger. It is not uncommon for thoſe labouring under this form of the gout, ſuddenly to die while converſing, and with ſo much eaſe, that death is

ſometimes announced by no other ſymptom than the head falling on the breaſt.

All cauſes of debility diſpoſe the gout to attack the ſtomach, particularly the cauſes which act more immediately on the ſtomach itſelf, exceſs in eating or drinking, a diet of difficult digeſtion, &c. It is obſervable, ſays Muſgrave, that ſuch as have an hereditary gout are more liable to attacks in the ſtomach, than thoſe in whom the gout is accidental; thoſe who are born of old parents, than thoſe born of young; thoſe who have a bad appetite and labour under a cold languid gout, than ſuch as have a better appetite and whoſe gout is more painful and attended with a greater degree of fever. The melancholic temperament, it is ſaid, alſo diſpoſes to the atonic gout. How far all of theſe obſervations are juſt it is difficult to ſay; all that we certainly know is, that the debilitated are moſt ſubject to this form of the diſeaſe.

After the dyſpeptic ſymptoms have continued for ſome time, or indeed from their firſt appearance, they are ſometimes accompanied by thoſe denoting derangement in the whole inteſtinal canal. The patient complains of a pain in ſome part of the belly, generally about the umbilicus, which gradually extends, increaſing in ſeverity and accompanied with obſtinate coſtiveneſs. It has been called the arthritic colic, and is attended with great danger. Sometimes, though more rarely, a diarrhœa comes on, accompanied with much griping, and ſometimes with ſevere teneſmus and bloody and dyſenteric ſtools. The patient at the ſame time is often troubled with dyſpnœa and cough, and with a ſenſe of oppreſſion and heavineſs in the cheſt.

The arthritic colic and diarrhœa frequently make their attack in autumn, and continue to haraſs the patient during the winter, who, emaciated and exhauſted, at length ſinks under them.

Both the diarrhœa and dyſentery are apt to ſupervene on the colic; and when the diarrhœa is moderate, it often proves ſalutary; when profuſe and obſtinate it is attended with great danger.

It is not difficult to conceive how dreadful a diſeaſe dyſentery ſupervening on gouty colic muſt frequently be. It often proves fatal by hemorrhagy, from ſome part of the inteſtines, ulcers and abſceſſes, as diſſection has demonſtrated, frequently taking place.

The moſt frequent cauſes of affections of the bowels in gouty habits are the unguarded application of cold, and the preſence of much bile and other irritating matter in the alimentary canal.

Theſe, as well as the affections of the ſtomach, are for the moſt part accompanied with ſlight and irregular gouty pains in ſome of the joints, which, when they become more fixed and ſevere, often bring very ſudden relief to the internal diſeaſe; ſo that the latter frequently alternates with the affection of the joints, protracting the fit for many months, the prognoſis being more or leſs favourable according as the one or other predominates.

Atonic gout leſs frequently attacks the thorax, but its effects here are equally diſtreſſing and dangerous. After the ſudden application of cold, or any cauſe which deranges digeſtion, a gouty patient ſometimes becomes reſtleſs and uneaſy, cold ſweats breaking out, the countenance becoming pale, and the pulſe weak and intermitting; theſe ſymptoms being often ſucceeded by a fit of palpitation, or ſyncope. As ſuch affections come on, the pains of the joints, if there are any, abate, and without ſpeedy aſſiſtance death often enſues.

The gout ſometimes appears in the form of aſthma, particularly in thoſe who from a bad conformation of the cheſt or from being of aſthmatic parents are diſpoſed to it. The

aſthma from gout, like common aſthma, is either dry or moiſt, the latter is regarded as moſt dangerous. They both ſpeedily diſappear when gouty pains come on.

There is a diſeaſe of the cheſt, termed a gouty defluxion, which reſembles peripneumonia notha, frequent in old people who have been long ſubject to gout. It ariſes from the cauſes of pneumonia, combined with thoſe which diſpoſe the gout to aſſume the atonic form. The expectoration at firſt is thin and ſcanty, becoming thicker and more copious, oppreſſing the lungs, and ſometimes occaſioning ſuffocation. It frequently returns at intervals, beginning with a troubleſome cough. Cough, indeed, is a frequent ſymptom of atonic gout, even where the lungs are not the chief ſeat of the diſeaſe; and often precedes the other ſymptoms.

Theſe, like almoſt all other affections of the cheſt, ſometimes terminate in phthiſis pulmonalis.*

When the gout attacks the encephalon, it produces head-ach, giddineſs, loſs of memory, palſy, and apoplexy, and even mania. It is not uncommon for head-ach and giddineſs, accompanied with a florid countenance, noiſe in the ears, a large pulſe, and more or leſs dyſpnœa, for ſometime to precede palſy and apoplexy, and in a gouty habit, unleſs theſe ſymptoms are removed by the appearance of ſome other form of the diſeaſe, they often end in this way, ſometimes after continuing for weeks or even months.

An indulgence in full living and indolence, eſpecially after the meridian of life and where the habit is inclined to corpulence and plethora, particularly diſpoſes to this form of gout. In common with other caſes of atonic gout, it may be occaſioned by all cauſes of debility.

Atonic gout ſometimes appears in other forms, beſides

* See Musgrave's Treatises.

thoſe it aſſumes in the three cavities. The arthritic quinſey often ſeizes the patient while he is labouring under pains of the joints, and ſometimes makes its appearance a ſhort time after a regular fit. This form of the diſeaſe approaches more nearly in its nature to the regular gout. It ſometimes ſupplies the place of a regular fit, and is ſucceeded by the ſame health and cheerfulneſs, and it more frequently than other forms of atonic gout, if it deſerves the name, terminates in a regular fit.

If, ſays Dr. Muſgrave, nauſea and ſickneſs, heavineſs, numbneſs, and wandering pains, have preceded the quinſey, there is reaſon to believe that it proceeds from the preſence of gout in the habit, eſpecially if the patient has formerly laboured under regular fits of the diſeaſe.* People with ſhort necks and relaxed and debilitated habits are moſt ſubject to gouty quinſey. It attacks men about middle life, and women after the menſtrual diſcharge ceaſes. More fever precedes the quinſey than other forms of irregular gout.

There is a gouty ophthalmia as well as quinſey, which is known in the ſame way and terminates in a ſimilar manner.

Eryſipelatous inflammation of the ſurface and impoſtume ſeem alſo occaſionally to ſerve the purpoſe of a regular fit of the gout.†

The pains in the back, loins, ſhoulders, and external parts of the head, in gouty habits, reſembling rheumatiſm, and which certainly partake much of a rheumatic nature, Dr. Muſgrave conſiders as ſymptoms of atonic gout. The gouty affection ſometimes fixes itſelf in the back, reſembling a fit of the gravel. This form ſeldom appears except in thoſe exhauſted by old age and the long continuance of the diſeaſe.

* See the Rev. Mr. Warner's Account of his own case of gouty quinsey, in his Treatise on the Gout.

† Dr. Musgrave's Treatises, Dr. Gardener on the Gout and Gravel.

In ſhort, there is no diſeaſe to which gouty people are ſubject that does not ſhew ſome connection with gout. The gouty humour, ſays Dr. Muſgrave, ſometimes falls on the glands within the orbits of the eyes, cauſing a diſcharge of ſharp ſerum. Sometimes it attacks the gums and membranes ſurrounding the roots of the teeth. The noſe, the lips, the tongue, and every part of the body, he obſerves, are ſubject to attacks of the arthritic matter. Dr. Whytt* of Edinburgh remarks, that he has ſeen the atonic gout in the form of diabetes, hemiplegia, mania, itching of the ſcrotum, dyſuria, diſcharge from the urethra, and pain in the teſticles. Every phyſician has met with ſimilar affections connected with gout, the connexion appearing by their ſuffering a conſiderable abatement, or wholly diſappearing, as ſoon as the gout ſhews itſelf in the extremities.

The more inflammatory of the foregoing affections may be thought more properly to belong to the miſplaced gout, but this is a point of little importance.†

It is the opinion of many, that the gout never ſhews itſelf for the firſt time in the atonic form. The beſt obſervations I have met with in oppoſition to this opinion, are thoſe of Dr. Clark, in a paper on Anomalous Gout, in the third volume of the Eſſays and Obſervations Phyſical and Literary. The atonic gout, he maintains, will often remain for many years without any appearance of regular gout having preceded it. If ſo, it is of conſequence to determine its preſence, becauſe the treatment is in ſome reſpects different from that of the diſeaſe which it reſembles.

Although Dr. Muſgrave notices the appearance of atonic

* See the 3d. vol. of the Essays and Obs. Phys. and Literary.

† See Dr. Cullen's Observations on the Gouty Affection of the Bladder and Rectum.

gout without any previous attack in the extremities, he does not attempt any diagnoſtic of ſuch caſes, but ſeems to think that their nature can only be aſcertained by the appearance of regular gout.

Dr. John Clark, father to the author of the above paper, regarded white ropy ſemi-tranſparent filaments floating in the urine as a diagnoſtic ſymptom of atonic gout, when it appears without having been preceded by an attack in the joints. To this ſymptom the author of the paper adds ſtrangury, which he met with in a large majority of ſuch caſes, and he thinks it a peculiarity of this ſtrangury that it is generally relieved by bliſtering the ancles; but Dr. Whytt obſerves, that the ſame means relieve the ſlight ſtrangury which frequently attends fevers. The former remarks, that the matter thrown up from the ſtomach in caſes of atonic gout, is generally a whitiſh gelatinous pituitous matter, which he regards as a diagnoſtic of this affection. Gonorrhœa in men, and the fluor albus in women, he thinks are frequent appearances in this form of gout, and may aſſiſt in diſtinguiſhing it. Sauvages mentions the gonorrhœa podagrica among the ſpecies of gout.

Both Dr. Clark and Dr. Whytt think the atonic gout more common, eſpecially among young people, than is generally ſuppoſed. *

After all that has been ſaid on the ſubject, however, as the ſymptoms of atonic gout ſeem to be merely thoſe of debility, which may proceed from a variety of cauſes, it is probable we ſhall never detect any diagnoſtic ſufficient to diſtinguiſh ſuch caſes with certainty, where the gout has not

* The reader may conſult the case of Mr. Alexander Small, surgeon to the ordnance in Minorca, related by himself, in the sixth volume of the Medical Observations and Inquiries.

previouſly appeared in a leſs equivocal form. Beſides, if we except diſorders of the ſtomach, an organ which ſo eminently ſympathiſes with every part of the ſyſtem, all the ſymptoms of atonic gout, thoſe of aſthma, palſy, apoplexy, &c. are generally produced by the ſame cauſes which occaſion theſe diſeaſes in ordinary caſes; the only difference being, that in gouty habits a leſs powerful application of them is ſufficient, and even the dyſpepſia of gouty patients is always obſerved to be moſt ſevere in thoſe, who are expoſed to the peculiar cauſes of this diſeaſe.

It ſeems, therefore, that were we to adapt our language to the real ſtate of our knowledge, inſtead of talking of the tranſlation of gouty matter to the ſtomach, thorax, head, &c. in the various caſes of atonic gout, we ſhould only ſay, that the gout gives a prediſpoſition to certain diſeaſes, which being excited may occaſion the gout itſelf, in the ſame way that almoſt any cauſe of derangement occaſionally excites habitual diſeaſes. Nor need it ſurpriſe us, that the appearance of regular gout relieves the atonic ſymptoms. How frequently do we obſerve one diſeaſe ſubſide on the appearance of another, where gout is in no way concerned; and particularly a diſeaſe of debility when a painful diſeaſe ſupervenes. We often relieve apoplexy and ſyncope by pain artificially excited. I have ſeen the ſymptoms of dyſpepſia ſuddenly relieved by a ſevere fit of tooth-ach.

On the ſymptoms of the remaining forms of gout, the retrocedent and miſplaced, a very few words will be ſufficient.

The retrocedent gout only differs from the atonic by being preceded by part of a regular fit.

The propriety of regarding what is termed the miſplaced gout as a ſpecies of this diſeaſe, is doubtful. It is unnoticed

by Sydenham and many other writers. If the inflammation of the internal part come on without being preceded by any affection of the joints, how are we to determine that it is at all connected with gout. If it ſupervenes on the inflammatory affection of the joints ſuddenly receding, it may ſtill proceed from other cauſes, for many of thoſe moſt apt to occaſion a retroceſſion, are alſo ſuch as frequently excite viſceral inflammation; ſo that it would not ſeem ſurpriſing if, in a few inſtances, ſuch inflammation ſupervenes on a ſudden retroceſſion of the gout, although there be no connection between the diſeaſes. Beſides, if during a fit of the gout a viſceral inflammation ſhould by any cauſe be excited, we muſt ſuppoſe, from what we ſee in other caſes, that it would relieve or wholly remove the affection of the joint. Inſtances of miſplaced gout ſeem rarer than from theſe circumſtances we ſhould expect to find them, even on the ſuppoſition that the gout has no ſhare in producing them. It would appear upon the whole, therefore, that all we are to underſtand by miſplaced gout is a viſceral inflammation ſupervening in a gouty habit, to which, however, gout ſeems little, if at all, to prediſpoſe.

Although Dr. Cullen admits this ſpecies of gout, he confeſſes that he never met with any inſtance of it in his own practice, nor found any caſe diſtinctly marked by practical writers, except that of pneumonic inflammation. I am inclined to think, that in this exception Dr Cullen alludes to the pneumonia mentioned by Dr. Muſgrave as a ſymptom of irregular gout. But what he ſays of it is not very favourable to the ſuppoſition of miſplaced gout; for it would appear from his obſervations, that arthritics ſubject to pneumonia are ſuch as muſt, independently of gout, have been prediſpoſed to this diſeaſe.

When the gout does not ſhew itſelf till late in life, it ſeldom riſes to the ſame degree as when it appears more early, and it is leſs frequently accompanied with nephritic and other ſymptoms of irregular gout; as indeed might, a priori, be ſuppoſed, ſince the ſyſtem is generally ſubject to gout for ſometime before theſe ſymptoms ſhew themſelves,* moſt of them being nothing more than ſymptoms of other diſeaſes to which the continuance of gout prediſpoſes. There is no rule, however, without exceptions. The gout, we have ſeen, is ſometimes, almoſt from the firſt, accompanied with the more alarming atonic ſymptoms.

SECT. III.

Of the Remote Cauſes of Gout.

The gout is a diſeaſe of cold and temperate climates. It frequently makes its attack in autumn on the ſetting in of the cold, more frequently in the ſpring, when the temperature begins to increaſe, eſpecially when the viciſſitudes of heat and cold are conſiderable.

Thoſe moſt ſubject to gout are men of a robuſt and rather clumſy make, with large joints and head, a rough ſkin, rather corpulent habit, and, it has been ſaid, of quick parts; ſuch as

* See a paper, intitled a New Pathology of the Gout, by Stahl, in the sixth volume of Haller's Disp. ad Morb. Hist. et Cur. Pert. The reader will find some good observations on the gout in this and another paper by Hahn, in the same volume.

have led an indolent and luxurious life, uſed a large proportion of animal and high-ſeaſoned food, and indulged freely in the uſe of fermented liquors. The cauſes of general debility alſo, exceſſive venery, much application to ſtudy or buſineſs, vexation of mind, night watching, &c. prediſpoſe to this diſeaſe. In ſhort, whatever tends to produce plethora, hurt the digeſtive organs, and impair the vigor of the ſyſtem, may be ranked among its cauſes.

The gout more rarely attacks women and eunuchs. When it appears in them, it is generally in ſuch as are of the habit juſt deſcribed, and have been accuſtomed to indolence and full living.

It has been a common opinion, that the ceaſing of the menſtrual diſcharge diſpoſes to gout, and as a cauſe of plethora it probably has more or leſs of this effect. But as it happens about the time of life at which the gout is moſt apt to ſhew itſelf in both ſexes, and many women have been attacked by gout before menſtruation ceaſed, it is probable that it has little ſhare in producing it. Dr. Cullen obſerves, that he has known ſeveral women ſubject to gout in whom this diſcharge was more profuſe than uſual.

Among the people of a country where the gout is prevalent, we find ſome ſubject to it from very ſlight irregularities, while others are expoſed to the ſame or more powerful cauſes, and yet eſcape it; and, on enquiry, it is generally found, that the fathers or other progenitors of the former had laboured under this diſeaſe. The obſervation has been ſo often made by the vulgar, as well as phyſicians, that there is no point in medicine better aſcertained. Notwithſtanding this, by ſome it has been called in queſtion, and has even been made the ſubject of ſerious diſcuſſion. When we read Dr. Cadogan's fallacious arguments againſt the opinion of an hereditary gout, and the refutation of them by Dr. Berkenhout

and Dr. Falkconer, we are lefs furprifed at the hypothefis of the firft writer, than at feeing the others fet about gravely to refute it.

There are few in whom the hereditary difpofition is fo ftrong that it is capable of exciting the difeafe without the concurrence of fome other of its caufes, fo that thofe fprung even from the moft arthritic parents, may efcape it by temperance and exercife; and, on the other hand, there are few in thofe countries where the gout has been long known, fo free from the predifpofition that it may not be excited in them.

That indolence predifpofes to gout appears from it's rarely attacking thofe who have followed laborious occupations. It has often been obferved, that although common foldiers are far from leading a temperate life, they are feldom fubject to gout; while, on the other hand, thofe who lead a fedentary life, often find the ftricteft attention to temperance infufficient to prevent its attack. It is the indolence of literary men, Dr. Gardener obferves, which has given rife to the opinion of abilities indicating a predifpofition to gout. There may be fome truth in this obfervation; at the fame time long and intenfe application of the mind feems to deferve a place among its predifpofing caufes. The bad effects of nightly ftudy, indeed, are partly to be afcribed to its encroaching on the hours allotted to fleep.

With regard to the kind of diet which predifpofes to gout, although it is granted on all hands that fermented liquors, as well as much animal food, have this tendency, there is great difference of opinion concerning the kinds of fermented liquors which have moft of it, and the obfervations of writers are in direct contradiction to each other. In [illegible] country we accufe wine of giving the ftrongeft predifpofition to gout, becaufe the lower ranks are little fubject to it. [illegible] however, the tendency may be counteracted by other caufes. But

Van Swieten obſerves, that when the people of Holland drank malt liquor the gout was hardly known there, but has become very common ſince the introduction of wine. "I will not "take upon me to determine," ſays Dr Cheyne, in his Obſervations on the Mode of Treatment in Gout, "but I be-"lieve the fact is, both in the ſtone and acquired gouts, that "thoſe who only drink malt liquors, without wine or ſpirits, "are ſeldom violently afflicted with either" Liger, profeſſor of phyſic in the Univerſity of Paris, on the other hand, obſerves, that in Champaign and Burgundy, where the people drink nothing but wine, the gout is hardly known; and Hoffman agrees with this writer, that beer is more apt to produce gout than wine. Liger admits, that ſweet wines prediſpoſe to gout; and it is a very general opinion, that the moſt aceſcent wines have moſt of this tendency. This, however, appears doubtful, for although aceſcent wines, and every thing elſe which occaſions much acidity in the primæ viæ, tend to excite fits of the gout in thoſe who are ſubject to the diſeaſe, it ſeems, from a great variety of obſervations, that the ſtronger wines are more apt to give the prediſpoſition. Liger makes the ſame obſervation reſpecting beer and cyder, the ſtrongeſt he found moſt to prediſpoſe to gout.

Whatever be the comparative effects of wine and malt liquor, it ſeems to be pretty generally admitted that cider and perry tend more than either to give this prediſpoſition; but here perhaps authors ſtill confound the cauſes moſt apt to excite the fit in thoſe who are ſubject to gout, with thoſe which prediſpoſe to it.

It ſeems in general to require a combination of the two laſt mentioned cauſes, indolence and intemperance, to produce gout where there is little hereditary prediſpoſition. Where this is ſtrong, very ſlight circumſtances are capable of exciting it, nor can the ſtricteſt attention to temperance al-

ways prevent its appearance Proofs of this we fee in our own country; and we are told of people who ufe almoft folely a vegetable diet, generally drink water, and attain an old age, and, notwithftanding, are greatly afflicted with gout.*

Of the exciting caufes of gout. Dr. Cullen juftly obferves, that although phyficians have pointed them out with confidence, in a difeafe depending fo much on predifpofition they muft be uncertain; in the predifpofed the occafional caufes are not always evident, and in thofe not predifpofed the moft powerful are often applied without effect.

Many of the caufes juft enumerated, if applied fuddenly and to a confiderable degree, act as exciting caufes. A fingle fit of intoxication, or any other caufe which greatly deranges the digeftive organs, may excite the gout in the predifpofed, expofure to a moift cold air without exercife, acefcent food and food of difficult digeftion, unufual repletion of the ftomach, obftinate vomiting, acids, either vegetable or mineral, taken in confiderable quantity, and bile or any other irritating matter in the ftomach and bowels.

Many of the occafional caufes of gout lefs immediately affect the ftomach, exceffive evacuations of any kind, or a want of habitual evacuations, particularly coftivenefs or obftructed perfpiration. It is chiefly to the laft caufe, perhaps, that the returns of gout in fpring and autumn are to be attributed. External injuries, efpecially done to any of the joints liable to gout, often excites it in the predifpofed. In fhort every caufe which fuddenly affects to a confiderable degree either the general health or the part which the gout occupies, may excite a fit. The paffions and even the imagination may have this effect. A piece of bad news has often excited the

* See Prosper Alpinus de Med. Egyp.

gout. A late eminent profeſſor, it is ſaid, often began to cripple as ſoon as he began to lecture on this diſeaſe.

Some of the firſt writers believe the gout to be contagious. Both Boerhaave and his commentator are of this opinion. But the diſeaſe being ſo common, the opinion if it were well-founded muſt have been more general.

SECT. IV.

Of the Nature of Gout.

So much has been written, and ſo many opinions advanced reſpecting the nature of gout, that I ſhould not, perhaps, be excuſed for wholly paſſing it over in ſilence.

No opinion has prevailed ſo generally as that which ſuppoſes this diſeaſe to ariſe from the preſence of ſome morbid matter in the blood. What this matter is has long been a ſource of diſpute. Some aſſert that it is the natural fluids of the body changed by putrefaction or become too viſcid; others, that it is a bilious humour; ſome, that it is a mucilage; others, that it is a tartarous or urinous ſalt; by ſome it is ſuppoſed to be the ſuperfluous part of the chyle; by others, an æther; ſome maintain that it is an earth; others, an alkali; and others, an acid. This laſt opinion has been long prevalent, and many regarded it as confirmed by the experiments of Scheele on urinary calculi; for at one time it was very generally ſuppoſed, that urinary calculi and gouty concretions were of the ſame nature.* With regard to all theſe opinions, it is only

* It appears from the experiments of Dr. Wollaston, (Observa-

neceſſary to ſhew that we have no proof of the gout ariſing from morbific matter of any kind. This the reader will find done in the 529th paragraph of Dr. Cullen's Firſt Lines.

Dr. Cullen gives his own opinion in the following words, "In ſome perſons there is a certain vigorous and plethoric "ſtate of the ſyſtem, which at a certain period of life is lia- "ble to a loſs of tone in the extremities. This is in ſome "meaſure communicated to the whole ſyſtem, but appears "more eſpecially in the functions of the ſtomach. When "this loſs of tone occurs, while the energy of the brain ſtill "retains its vigour, the vis medicatrix naturæ is excited to "reſtore the tone of the parts, and accompliſhes it by ex- "citing an inflammatory affection in ſome part of the extre- "mities." By the operations of the vis medicatrix naturæ we only mean certain unknown changes in the animal ſyſtem, which are ſo termed, becauſe they ſeem to conduce to the reſtoration of health. If we ſubſtitute the meaning of the term, operation of the vis medicatrix naturæ, for the term itſelf, in Dr. Cullen's account of the proximate cauſe of gout, we ſhall find it changed into a conciſe detail of the progreſs of the regular form of the diſeaſe.

tions on Gouty and Urinary Concretions, by W. H. Wollaston, M. D. (Phil. Trans. p. 386, part ii, 1797) that the gouty calculus is the lithiat of soda, which never forms the urinary calculus, nor indeed seems ever to enter into its composition.

According to the experiments of Fourcroy and Vauquelin, (Sur l'Analyse des Calculs Urinaires Humains, par les Cit. Fourcroy et Vauquelin, Annales de Chimie, No. 95, p. 213) the various urinary calculi are found to be composed of one or more of the following substances, lithic or uric acid, urat of ammonia, phosphat of lime, phosphat of ammoniaco-magnesia, oxalat of lime, silex, and animal matter.

The ſame obſervation applies to what he ſays of the nature of irregular gout.

Various other hypotheſes have been advanced. The gout has been ſaid to ariſe from a vitiated ſtate of the nerves; to be an attempt of nature to recover the infantile permeability of arteries cloſed up by exerciſe; to be a ſpaſm of the alimentary canal, communicated to the extremities, &c. All that we are taught by the volumes which have been written on the nature of this diſeaſe, is the great obſcurity of a ſubject which has wholly eluded the reſearches of ſo many.

SECT. V.

Of the Treatment of Gout.

The gout is very generally regarded as an incurable diſeaſe, ſo that the views in regular practice are to correct the prediſpoſition before the diſeaſe has made its appearance, and when it has appeared, rather to palliate than remove it; for notwithſtanding all that has been ſaid of the effects of diet and exerciſe, if we except a few caſes where the prediſpoſition is inconſiderable, we ſhall find, that however much they mitigate, they almoſt always fail to prevent the returns of gout. It is true that we poſſeſs medicines capable of preventing its returns, but they often produce worſe diſeaſes.

We ſhall conſider the treatment of gout in the ſame order in which the ſymptoms were detailed.

1. Of the Treatment of the Regular Gout.

Gout, we have ſeen, differs in ſome very eſſential particulars from the foregoing diſeaſes, eſpecially in its conſtantly returning, however carefully the exciting cauſes are avoided, and in the great tendency it occaſions to other diſeaſes. The ſame circumſtances influencing the principles on which its treatment is founded, render them very different from thoſe which regulate our practice in the other phlegmaſiæ. In a paroxyſm of the gout it is not our chief aim to remove the inflammation; this indication, indeed, is often almoſt wholly overlooked. The objects we have chiefly in view are, ſo to remove the paroxyſm that the ſucceeding interval may be as long as poſſible, and that any tendency to atonic gout may be obviated; the danger in gout proceeding neither from the local affection nor the general excitement, but from the paroxyſms becoming frequent and irregular.

At the ſame time the debility left by a ſevere fit ſeems itſelf to diſpoſe to irregularity, and the diſtreſs occaſioned by it is ſo great that we are called upon to alleviate the patient's ſufferings as far as it can be done with ſafety. Some, indeed, have aſſerted, that the various means of diminiſhing the pain are not only ſafe, but, by rendering the paroxyſms leſs debilitating, tend to prevent the atonic forms of the diſeaſe. This maxim, however, is to be admitted with caution; it is only in certain caſes and to a certain extent that it can be reduced to practice.

The conſtant tendency of gout to recur, renders the advice of the phyſician as neceſſary after, as during the paroxyſm. Our aim is ſtill the ſame, that of prolonging the interval, and rendering the ſucceeding fit mild and regular.

Such are the principles on which the treatment of gout is

founded. It appears from what has been ſaid, that during the paroxyſm two indications preſent themſelves, which in ſome meaſure ſtand in oppoſition to each other. If we uſe vigorous means for the relief of preſent ſuffering, we endanger the future health; if we attend to the latter only, we often have it but little in our power to mitigate the former.

1. Of the general means employed during a paroxyſm of regular gout.

A phyſician, who had been accuſtomed to practice in the phlegmaſiæ and had never ſeen a gouty patient, would not heſitate in a regular paroxyſm to recommend a free uſe of the lancet. He would ſoon, however, perceive his error. The inflammatory ſymptoms, indeed, would be relieved, perhaps wholly removed; but if he perſiſted in this practice, they would ſoon be ſucceeded by a more alarming train of ſymptoms. "Sin autem, in paroxyſmis ſubſequentibus phlebotomia jugiter utatur, podagra quam citiſſime etiam in juvene inveteraſcet, et intra paucos, latius imperium, ſeu potius tyranidem propagabit, quam alias in multis extendere valuiſſet."*

Moſt European phyſicians give nearly the ſame opinion of blood-letting in gout which Sydenham gave above a hundred years ago. It is neither, he obſerves, to be employed for preventing or alleviating the paroxyſm of gout, at leaſt in thoſe who are advanced in age. For although the blood drawn during a paroxyſm, like that drawn in inflammation of the lungs, ſhews the buffy coat, blood-letting is as pernicious in the one, as it is beneficial in the other. If blood be drawn in the interval, he continues, there will be much danger of another paroxyſm making its appearance, which will laſt longer, and be accompanied with worſe ſymptoms, than the

* Sydenham De Podagra.

preceding. Yet he admits, that if the patient be young, and heated by the immoderate uſe of wine, blood-letting may be employed at the commencement of the paroxyſm.

Many late writers,* although they keep theſe maxims of Sydenham in view, have ventured to extend blood-letting at the beginning of the paroxyſm to thoſe caſes where the habit is full, the excitement great, and the local affection very conſiderable. "Sydenham," ſays Dr. Cullen, "has given it "as his opinion, that the more violent the inflammation and "pain, the paroxyſms will be the ſhorter, as well as the "interval between the preſent and next paroxyſm longer; "and if this opinion be admitted as juſt, it will forbid the "uſe of any remedies which might moderate the inflamma-"tion, which is to a certain degree undoubtedly neceſſary "for the health of the body. On the other hand, acute "pain preſſes for relief, and although a certain degreee of "inflammation may ſeem abſolutely neceſſary, it is not "certain but that a moderate degree of it may anſwer the "purpoſe. And it is even probable, that in many caſes the "violence of inflammation may weaken the tone of the "parts, and thereby invite a return of the paroxyſms." Dr. Cullen therefore concludes, that in the firſt paroxyſms in the young and vigorous, general blood-letting may be practiſed with advantage, although it cannot with ſafety be frequently repeated.

Moſt of the authors juſt alluded to appear to have recommended blood-letting too freely, and it ſeems, indeed, to be daily more and more going into diſuſe; ſo that, even in the caſes mentioned by Dr. Cullen, many object to it; and as we can generally by local means afford all the relief which

* Boerhaave, Van Swieten, M'Bride, Liger, Cullen, Cadogan, &c.

is confiſtent with the patient's ſafety, there ſeems very rarely any good reaſon for having recourſe to it.

Moſt of the beſt writers on this diſeaſe have condemned the uſe of cathartics in it. Some, Cheyne, Hoffman, M'Bride, Cadogan, &c. recommend mild cathartics, but Sydenham declares, that even the mildeſt employed during the paroxyſm tend to render it irregular. Boerhaave and Lieutaud make ſimilar obſervations. Dr. Cullen makes no mention of them at this period, and the Rev. Mr. Warner and others, who ſpeak of their own caſes, ſay they have experienced the worſt effects from them, ſo that catharſis, it would ſeem, is even more pernicious in the paroxyſm than blood-letting.

I ſhall preſently have occaſion to make ſome obſervations on the uſe of cathartics during the interval, at which period they have been chiefly recommended. In the mean time it may be obſerved, that it has been common to exhibit a cathartic immediately after the paroxyſm. This practice has chiefly ariſen from a belief that catharſis at this period carries off the remains of the diſeaſe; but ſo far from having this effect, it often renews the paroxyſm. Sydenham confeſſes, that this opinion induced him to take a cathartic immediately after a paroxyſm, the conſequence of which was that he immediately fell into another. "Purging," Dr. Cullen obſerves, "immediately after a paroxyſm will be "always employed with the hazard of bringing it on "again."

Irritating matter ſometimes accumulates in the alimentary canal during the paroxyſm, now and then occaſioning griping and diarrhœa; towards its decline the diſcharge of this matter is only to be promoted by mucilaginous and diluting fluids, and when it ſeems to be evacuated the diarrhœa muſt be reſtrained by gentle anodynes and aſtringents; the œdematous ſwelling of the feet, which ſometimes ſucceeds the paroxyſm,

and for which it has been uſual to give cathartics, generally goes off without any remedy.

It often happens, that the bowels are coſtive during the paroxyſm, which, we have ſeen, is ſometimes protracted for a conſiderable length of time; mild laxatives then become neceſſary, for we cannot long truſt the excitement of the bowels to clyſters only.

There is ſome difference of opinion concerning the employment of emetics in the gout. Some think they are ſerviceable at the commencement of the paroxyſm. Dr. M'Bride recommends one of the mildeſt to be given with wine if the patient is languid. Upon the whole, however, it ſeems to be the general opinion, that unleſs the ſtomach is loaded, they are at leaſt unneceſſary.

Diaphoretics have been eſteemed more uſeful as alteratives in the intervals than during the paroxyſm. The benefit derived from a gentle ſpontaneous ſweat coming on towards morning, however, has induced many to recommend them at this period. Dr. Cheyne obſerves, that after the fit is diſtinctly formed, particularly in complicated and tedious caſes, and when the patient is advanced in life, they are ſerviceable. Boerhaave, Van Swieten, Liger, Dr. Caverhill, and others, are advocates for them, eſpecially when the paroxyſm has ariſen from any cauſe tending to check perſpiration. But it may upon the whole be obſerved, that much benefit has not attended this practice, and it is very generally laid aſide. Sydenham even apprehended danger from it, although he conſiders an increaſe of perſpiration ſafer than moſt other evacuations during the fit.

Sydenham and Quincy are among the authors who have given opiates moſt freely in this diſeaſe. They were ſtill given, however, as a dangerous remedy. If the pain, ſays the former, is ſevere, the patient ought to keep his bed, and

be contented with this remedy. If, however, it greatly exceed his patience, he may take a ſmall doſe of opium in the evening.

No other writer has beſtowed ſuch unlimited praiſe on opium in the gout, as the Rev. Mr. Warner. This author, not belonging to the profeſſion, and, indeed, betraying his ignorance of the preſent ſtate of medicine in every part of his treatiſe, would deſerve little notice, were it not that he ſuffered ſo much from gout in his own perſon, and gave opium ſo fair a trial. Dr. Falkconer juſtly cenſures him for the confidence with which he ſpeaks of its effects from a ſingle caſe. I muſt refer the reader to his treatiſe for the facts on which his opinion is founded, and the manner, according to him the only proper one, of preparing the anodyne. A ſafe medicine, capable of relieving the torments and ſhortening the paroxyſm of gout, is a great deſideratum. Should Mr. Warner's anodyne prove innocent, it will be an invaluable addition to the remedies at preſent employed in this diſeaſe. The chance, however, is much againſt it, whether we regard the obſervations of various writers, or the well-known effects of opium in other caſes. It is an argument againſt it, that Mr. Warner's practice, though generally known, has not been followed. Nor is it to be overlooked, that Mr. Warner died very ſoon after the publication of his treatiſe.

The bad effects aſcribed to opium, exhibited during the paroxyſm, are its occaſioning it, after a few hours of relief, to return with great violence, and, by the debility it induces in the organs of digeſtion, giving a tendency to the atonic forms of the diſeaſe.

From the tendency of opiates to induce the atonic forms of gout, they have been generally judged ſafer in the young and thoſe who have been lately attacked by the diſeaſe, than in old people and thoſe who have been long ſubject to it. On

the other hand, it is chiefly in the young that opium is apt to renew the paroxyſm.

Dr. Cullen ſeems to have overlooked the former tendency of opium, whence he pronounces its exhibition ſafeſt in the aged and thoſe who have been long ſubject to gout. In young arthritics he recommends an anodyne after the force of the fit is broken, when the pain only returns during the night and prevents ſleep; and moſt writers admit of this uſe of opium. Liger, and ſome others of leſs note, Dr. Bennet, Dr. Williams, &c. forbid it, but their objections do not appear to be the reſult of obſervation.

Sydenham long ago pronounced the dieta tenuis the proper diet in a fit of the gout. When the patient is ſtrong and full of blood, has not ſuffered much by former attacks of the diſeaſe, nor been in the habit of uſing much wine or other fermented liquors, and the inflammatory ſymptoms run high, this diet is neceſſary. When, on the other hand, he has lived freely; when he has long been ſubject to attacks of the gout, eſpecially when theſe have ſhewn a tendency to become irregular, when the ſyſtem has fallen into a ſtate of debility, or when the inflammatory ſymptoms do not run high, a low diet is improper. A certain quantity of wine muſt be allowed proportioned to the patient's habits, and he ſhould uſe animal food; if the ſtomach will not receive it in the ſolid form, in that of broths.

In ſuch caſes, aromatics and ſtrong peppers have been much recommended, and to a certain extent appear ſometimes to do good. The ſtimulating regimen, however, has doubtleſs often been carried too far.* Diſputes naturally lead to extremes, and there have been ſo many diſputes reſpecting the treatment of gout, that few writers can be wholly relied on.

* See Dr. Cadogan's Treatise on the Gout.

The temperature of the patient's room ſhould be cool and uniform.

Concerning the local means employed during the paroxyſm, there has alſo been much difference of opinion, and we ſhall find upon the whole, that like the means we have been conſidering, few of them can be employed with ſafety.

There was a very early prejudice againſt local blood-letting in the paroxyſm. Whether this prejudice in its full extent is well founded, has not been poſitively determined. It would ſeem, that blood may ſometimes be taken with advantage from the inflamed joint in the young and vigorous.

Dr. Cullen obſerves, that when the pain is very acute, he believes that bleeding by leeches in the foot and inflamed part may be repeated. "I have known inſtances, he adds, of its having been practiſed with ſafety;" but he confeſſes that he cannot determine to what extent it may be carried. Hoffman recommends it freely, and Dr. Gardener and others follow him. But they talk of it in ſo general a way, that it is evident their obſervations are not the reſult of experience.

From analogy it would ſeem, that local blood-letting, indiſcriminately employed, muſt often prove a dangerous remedy in the gout; and its being very generally abandoned, notwithſtanding the almoſt uniform relief it brings, is a ſufficient proof of its having been found hurtful. Its frequent repetition is particularly to be avoided, and it muſt not be attempted in the aged and thoſe whoſe conſtitutions are already broken by the diſeaſe.

Many applications to the inflamed joint, for the purpoſe of mitigating pain, have been propoſed. They have, however, been ſo often productive of bad effects, that they are very generally laid aſide. It will be neceſſary, however, to notice

thoſe which have been moſt generally recommended, and particularly ſuch as are ſtill in uſe.

"Bliſtering," Dr. Cullen obſerves, "is a very effectual "means of relieving and diſcuſſing a paroxyſm of the gout, "but has alſo frequently had the effect of rendering it retro-"cedent." What is true of bliſters, is, with little change, true alſo of ſynapiſms. The relief obtained by them in regular fits is always at the riſk of producing worſe forms of the diſeaſe. The ſame obſervations apply to the practice of ſtinging the part with nettles; applying to it various aromatic oils, mixed with different kinds of ſoap; various preparations of opium; euphorbium, boiled with wax and oil; various balſams; ſpirituous liquors alone, or with camphor, &c. The reader will find an inſtance, related by Hoffman, in which the external application of ſpirituous liquors repeatedly relieved the pain, but proved fatal. Every thing of a highly ſtimulating nature tends to relieve the pain, and ſeemingly, in proportion as it has this effect, to render the gout irregular. Quick-lime and even arſenic have been recommended, the laſt is the baſis of Dr. Pitcairn's recipe for the inflamed joints. Sometime ago an application, which was ſaid to relieve the pain and ſhorten the fit, made much noiſe at Paris. This has ſince been found to be diluted muriatic acid. For the mode of uſing it the reader may conſult Dr. Rowley's Treatiſe. Dr. Stukely, in a letter to Sir Hans Sloan, recommends rubbing the joints affected with warm oil, prepared in a particular manner. Various other ſubſtances have been uſed in the ſame way, but as they are all now laid aſide, they muſt have been found either uſeleſs or hurtful.

Oiled ſilk has lately been much celebrated as an application to gouty joints. The reader will find it recommended by ſeveral writers, particularly by Dr. Caverhill, who is in ſome

degree whimſical in the effects he aſcribes to it. The oiled ſilk is ſaid to increaſe the pain, although it ſhortens the paroxyſm, when the inflammation is ſuperficial; it is when the pain is deep-ſeated, we are told, that it brings moſt relief. It is ſometimes applied alone, at other times over the flannels, and generally occaſions a profuſe perſpiration in the part. Some, who are afraid of moſt other applications, think this may be employed with ſafety. Analogy, however, is much againſt it; and it is very generally laid aſide in this country. By ſome it has been thought uſeful to increaſe the perſpiration of the ſound as well as the gouty foot.

No external application in gout has attracted ſo much attention as one uſed in the Eaſt termed Moxa. It is the down of the artemiſia. Sir William Temple, who uſed it in his own caſe, gives us an account of the manner of applying it. It is formed into a ſmall cone, which is placed with its baſe on the inflamed part. The apex is then ſet on fire, and the cone continues to burn till the whole, or nearly the whole, is conſumed.

"Upon the firſt burning," Sir William Temple obſerves, "I found the ſkin ſhrink all round the place, and whether the "greater pain of the fire had taken away the ſenſe of the "ſmaller or no I could not tell, but I thought it leſs than it "was. I burned it a ſecond time, and obſerved the ſkin "about it to ſhrink and the ſwelling to flat yet more than at "firſt. I began to move my toe, which I had not done "before, but I found ſome remains of pain. I burned it "the third time, and obſerved ſtill the ſame effects without, "but much greater within, for I ſtirred the joint ſeveral "times with eaſe, and growing bolder I ſet my foot to the "ground without any pain at all. After that, I had a "bruiſed clove of garlic laid to the part that was burned, "and covered with a large piece of diapalma to keep it

" fixed there." He then walked with eafe. " For the pain " of the burning itfelf," he obferves, " for the firft time it " is fharp, fo that a man may be permitted to complain."* He counted, he obferves, fix fcore and four as faft as he could during the burning of the moxa. The fecond burning was not fo painful as the firft, and the third much lefs painful than the fecond. The wound was not raw, but appeared fcorched and black. In a fhort time a blifter arofe, which left a fmall fore that foon healed.

Sir William Temple afterwards repeated the application of the moxa with fimilar fuccefs. Van Swieten gives an account of the fame operation, alfo performed with fuccefs.†

Some have attributed the effects of the moxa to a peculiar quality poffeffed by this fubftance, others with more probability to the burning. Sydenham does not fpeak much in favour of the operation, but thinks it may fucceed as well with dry lint. But the effect, he obferves, muft be temporary and fleeting. Were we fure that even this character of the operation was juft, it would be a valuable addition to the treatment in the paroxyfm; but it has not been often enough employed in this country to afcertain its fafety; and we have every reafon to dread the fame bad effects from it as from other local applications. Dr. Cullen obferves, that he confiders the burning with the moxa, or other fubftances, a remedy of the fame kind with bliftering. " I have, indeed," he adds, " no evidence of its proving hurtful, but neither have " I had any proper evidence of its having proved a radical " cure." Upon the whole, it may be obferved, it will require a very long experience to eftablifh the fafety of any remedy of this kind, for even the moft pernicious have been repeatedly employed before their bad effects appeared.

* Sir William Temple's Miscellanies.

† Van Swieten's Commentary on the 1278th aphorism.

Cold is one of the moſt effectual applications to the inflamed joint. By it we may to almoſt any degree diminiſh both the ſeverity and duration of the pain. But many caſes are on record in which it ſeemed to produce the ſame bad effects experienced from other local remedies, and many alledge, that in proportion as it is more effectual, it is more pernicious than moſt others. It has ſtill, however, many advocates, and Dr. Kinglake's Treatiſe has particularly directed the attention of the public to it. The reſult of our experience on the ſubject, as far as I can judge, is, that in the young and vigorous, when the inflammation runs very high, the cautious application of cold is often beneficial, but neither the extent to which it may be carried, nor the frequency with which it may be repeated with ſafety, have been aſcertained. From what has been ſaid on this ſubject, however, I think it appears pretty certain, that the great accumulation of heat occaſioned by wrapping the inflamed joint in many folds of thick flannel or in combed wool, or applying hot bricks to it as ſome recommend, often unneceſſarily aggravates the ſeverity of the paroxyſm; and is only proper where we have reaſon to believe that the degree of inflammation in the joint will not be ſufficient to relieve the internal parts; keeping the inflamed joint very warm often eventually relieves the pain by occaſioning ſenſible perſpiration of the part, but this is generally at the expence of much previous increaſe of ſuffering.

Various means have been propoſed to ſtrengthen the joint, which remains ſwelled, ſtiff, and weak after the paroxyſm has ſubſided. Bathing the part with cold water, rubbing with flannel and the fleſh bruſh, and endeavouring to uſe the joints, are the beſt. Some have recommended a variety of ſtimulating ſubſtances to be uſed in rubbing the joints, they do

not, however, ſeem to add much to the effects of the friction. Van Swieten obſerves, that although he orders the woollen cloths with which the friction is performed to be charged with the fumes of aromatics, yet he has found the ſame benefit from ſimple friction, which ſhould be uſed for an hour or longer morning and evening. The only good effects of impregnating the cloths ſeems to be that of inducing the patient to employ the friction.

Motion of the joint, has been recommended at the beginning of the paroxyſm, with a view to ſtop the fit. However ſucceſsful this practice may be, the extreme pain it occaſions will prevent its becoming general. The reader will find ſome obſervations on it in Dr. Caverhill's Treatise. I may alſo refer him to what Sydenham ſays of exerciſe during the fit. Few, however, have reſolution to go into a carriage, as he adviſes, or uſe even gentler modes of exerciſe at this period.

Certain applications have been ſuppoſed to poſſeſs a power of reſtoring ſtrength to the joints without friction. Hoffman recommends the volatile ſulphuric acid and ſome of the balſams with Hungary water. The reader will find Dr. James's and other preſcriptions of this kind in Mr. Warner's Treatiſe. Little or nothing is to be expected from them.

Nearly the ſame may be ſaid of the applications recommended to prevent or remove gouty concretions. Theſe have generally been either of an acid or alkaline nature. The diluted muriatic acid, the fixed alkalis, and quicklime, have been employed. Van Swieten ſpeaks of the benefit derived from a weak ſolution of a cauſtic fixed alkali in very ſtrong terms, both in gouty and other tumors. The reader will find ſimilar applications recommended in Hoffman's Section on Gout. Upon the whole, however, we generally find reaſon

to agree with Sydenham, that exercise is the best means for this purpose. He observes, that he has even seen gouty concretions of long standing resolved by exercise alone. When they make their way through the skin, if the habit is tolerably good, the wound generally heals readily with simple poultices.

When the patient is much reduced by the violence of the fit, and recovers his strength slowly, chalibeates and the bark are often serviceable.

Although the spirits and digestion generally become very good towards the end of a fit, it sometime happens, that as the pain abates, some atonic symptoms similar to those which precede it make their appearance. They are often relieved by absorbents and stomachic medicines.

We are now to consider the most important part of the treatment of gout, the means employed during the intervals with a view to prolong them, and to render the succeeding fit mild and regular. Sometimes, indeed, when the predisposition to gout is not strong, when the patient is young and the disease has only shewn itself in a mild paroxysm, we have it in view entirely to prevent its return. In both cases the means employed are the same, but differ considerably in degree.

I have already had occasion to hint that certain medicines have been employed for the purpose of preventing the return of gouty paroxysms even in the most inveterate cases. But a fatal and very extensive experience has convinced most physicians of the danger of having recourse to them. After considering the regular treatment, it will be proper to make a few observations on the nature and effects of some of these.

Although there are ſome medicines which have both proved ſafe and uſeful during the interval, our chief dependence is on a proper regimen; for much is not to be expected from any medicine we can venture to employ.

What was ſaid of the cauſes of gout may point out the proper diet. The ſymptoms of the diſeaſe, indeed, naturally lead us to that which experience has proved to be the beſt. We ſee the fit preceded by ſymptoms of debility, which points out the propriety of a nouriſhing diet. At the ſame time we obſerve that the regular gout conſiſts in a violent inflammatory affection of the joints, by which we are led to avoid the diet which moſt diſpoſes to inflammation. If the diet be too low, the fits will not only become more frequent, but will partake more of the atonic forms of the diſeaſe. If the diet be too full and ſtimulating, they will alſo become more frequent, and the inflammation will be more ſevere. It is true, indeed, that in this caſe they will for ſome time retain the regular form; but nothing is better aſcertained than that the frequent repetition of regular paroxyſms, eſpecially if ſevere, ſoon impairs the vigour of the ſyſtem, and induces the ſymptoms of irregular gout.

A proper diet has ſo long been regarded as among the moſt eſſential parts of the treatment of gout, that there are few writers on this diſeaſe who do not ſpeak of it at conſiderable length. There is, however, much difference of opinion reſpecting it. By ſome the uſe of animal food is forbidden. By others it is particularly recommended, and bread and vegetables are condemned as hurtful by producing acidity. Some have wholly condemned the uſe of wine, even in thoſe who have been accuſtomed to it. Others recommend it to all arthritics without exception.

It is as impoſſible to lay down any regulations reſpecting diet in the interval, as in the paroxyſm, which ſhall be univerſally applicable. It muſt ſtill be regulated by the age of the patient, his habits of life, the length of time he has been ſubject to the gout, the frequency and ſeverity of the paroxyſms, and the tendency which they have ſhewn to become irregular.

When the patient is young and has lived temperately, when he has only ſuffered a few paroxyſms and theſe have ſhewn no tendency to become irregular, he is in the moſt favourable ſtate for attempting a radical cure. His conſtitution is not yet habituated to the diſeaſe, and he can with ſafety uſe that kind of diet which has been found beſt ſuited to prevent its return, which, as appears from various obſervations, conſiſts chiefly, if not wholly, of milk and the more farinaceous vegetables; an aſſertion which has been denied, but chiefly, it would ſeem, from this diet having been preſcribed in improper caſes and not with ſufficient caution; for it is ſo different from that in general uſe, that even the young have not ſufficient ſtrength of conſtitution to bear the change if made too ſuddenly. It is only by degrees, and in the ſpace of ſome months at leaſt, that perhaps any arthritic ſhould be permitted wholly to abandon the uſe of animal food or wine.

Some have thought it ſufficient to perſiſt in a vegetable diet for a certain time, during which, if the gout has not made its appearance, they judge it ſafe for the patient to return to his former mode of life. But Hoffman and others alledge that if this is done, the gout is always renewed, and ſometimes in a worſe form. We rarely have an opportunity of aſcertaining which of theſe opinions is correct; but we have reaſon to believe, that after a certain time has elapſed, the patient may often return to the moderate uſe of animal

food, without renewing the diſeaſe. I have known young people who had had ſeveral attacks of gout from a ſtrong hereditary prediſpoſition, having always lived temperately, remain free from it without any material change of diet; but ſuch caſes, although affording an argument in favour of this opinion, are not, it is evident, exactly in point.

It is ſeldom, however, that a milk and vegetable diet can be reſorted to with ſafety. In thoſe advanced in life, or accuſtomed to intemperance, or in whom the vigour of the conſtitution is at all impaired, or even the regular gout has frequently returned, it is not to be attempted. But there is no caſe in which ſome change may not be made. If the patient has been intemperate, he muſt be allowed full living, but warned againſt exceſs. If he has only been a full liver, he ſhould be deſired to eat and drink more ſparingly, particularly to give up the uſe of animal food in the evening, and, according to Sydenham's rule, to confine himſelf to one diſh at dinner. He ſhould take only a few glaſſes of wine, which, if it does not cauſe acidity, is better than diſtilled ſpirits in any ſhape. We have even reaſon to believe, I think, that he ſhould prefer the weak wines to the ſtrong, or if he drinks the former dilute them with water. If, with this mode of life his ſtrength, as frequently happens, is rather increaſed than diminiſhed, he may gradually accuſtom himſelf to drink leſs wine, till at length, perhaps, he will find that he can lay it aſide altogether.

It ſhould, perhaps, be the view of every arthritic, whoſe conſtitution is ſtill vigorous, to bring himſelf to uſe water only, (Sydenham particularly recommends whey), at leaſt for his common drink. But there is not a more dangerous maxim than Dr. Cadogan's, that the change ſhould be made as ſpeedily as poſſible. There are few phyſicians who have not ſeen its fatal effects.

Dr. Falkconer has cenſured Dr. Cadogan for adviſing, that the diet of gouty patients ſhould be compoſed rather of ſolid than liquid food, and quotes Haller in ſupport of the oppoſite opinion. Moſt dyſpeptics, however, will agree with Dr. Cadogan. It would ſeem, that the gaſtric fluid having its powers diminiſhed in the dyſpeptic, will not admit of any dilution.

This writer has been more juſtly cenſured for regarding bread as pernicious. Many arthritics, however, who have been long accuſtomed (as a large majority have) to conſume great quantities of animal food with very little bread, complain of its oppreſſing the ſtomach and running into the acetous fermentation. But this proceeds not from the indigeſtible quality in the bread, but from the ſtomach not being accuſtomed to it. If the quantity be gradually increaſed, the arthritic will experience no inconvenience from it. And as it is very nutricious, without tending to produce the fullneſs occaſioned by animal food, when the ſtomach can digeſt it perfectly it ſhould form a principal part of the diet of gouty patients. Such is the power of habit in this reſpect, that even carnivorous animals may, by degrees, be brought to live wholly on vegetable matter; and granivorous, on animal food. Whereas if the change were made ſuddenly, the death of the animal would probably, in both caſes, be the conſequence.

Particular objections have been made to much ſalt, pepper, muſtard, vinegar, and all kinds of pickles, and not without reaſon, for theſe, if we except the firſt, are not only in themſelves hurtful to the ſtomach, but induce the patient to eat more than is neceſſary.

No attention to diet is capable of prolonging the intervals, and preſerving the paroxyſms mild and regular if exerciſe be neglected. When the patient is able to walk for a ſufficient

length of time without fatigue, this mode of exercise, as most uniformly employing the muscles, is preferable to any other. Some have recommended more violent exercise; but to be most beneficial, it must be such as can be continued for a considerable time without fatigue. It is true, indeed, we have heard of people of strong constitutions wholly cured of the gout by being subjected to much labour and abstinence. There are not a few instances, says Hoffman, of people having lost the gout with their fortunes. Van Swieten tells us of a priest, who was taken by pirates and condemned to the oar for two years, which wholly cured him of the gout he had been long subject to. In such cases, however, other circumstances concur with the exercise. The power of strong affections of the mind, and a total change of habits, every body is aware of. With regard to those who cannot walk, or cannot walk enough, they must ride on horseback, or if this is too much, in a carriage. If even this is not to be borne without fatigue, they should, morning and evening, undergo friction of the whole body, continued till they begin to feel some degree of wearinefs. Friction of the joints, indeed, while they remain stiff, should in no case be neglected. By these means the weakest arthritic will often be brought by degrees to bear the rougher exercises. It is to be observed, however, that much walking, when the fit is expected, may bring it on, especially if the feet are at all cramped or otherwise injured.

The exercise of the mind is also a matter of some importance in the intervals of gout. Nearly the same may be said of it as of bodily exercise. Any study which fatigues is injurious, and the constant languor of a mind wholly unoccupied, as I have already had occasion to observe, is no less so.

The early part of the day is the proper time for the exer-

cise both of mind and body. Repose towards evening is particularly necessary to invalids. The observations made on this subject during the intermission of agues are applicable here.

Some attention to the proper regulation of sleep is also necessary. Boerhaave recommends a great deal of sleep to his gouty patients; and within certain limits a large proportion of sleep is one of the best means of restoring strength. For this part of the subject I may also refer the reader to the chapter on intermitting fever.

Sydenham is among the very few writers who have taken notice of a choice of air in the treatment of arthritic patients. While the patient is using exercise, he observes, a wholesome air is to be preferred. Exercise in the country is better than exercise in the town, where the air is loaded with vapours, and rendered still worse by the closeness of the buildings. Many from their own experience can affirm the truth of these observations; and I have known instances in which dyspeptic patients could not with twice the exercise in London, preserve the same degree of health which they enjoyed in the country. It was supposed by many, till the experiments of several chemists demonstrated the contrary, that the air of great cities was less wholesome than that of the country, in consequence of its containing a less proportion of oxygen.

From many circumstances it would appear, I think, that the unwholesomeness of the air in great cities arises chiefly from its greater dampness; for a damp air, from whatever cause, occasions, in the debilitated, the same want of appetite, depression of spirits, and other nervous symptoms.* Its bad effects cannot be attributed to

* The cause of the greater dampness of the air of large cities appears from the experiments on which Dr. Hutton has founded

its abſtracting the heat with greater rapidity, as the ſame effects are not occaſioned by a dry air, however cold. Nor can a damp air be ſuppoſed to affect the lungs materially which are always moiſt. Its injurious effect ſeems to ariſe from that of moiſture on the ſkin, which ſo remarkably ſympathiſes with every part of the ſyſtem, and particularly with the ſtomach. All the ſymptoms occaſioned by a damp air are ſuch as indicate a want of vigour in the ſkin, and conſequently of free perſpiration, chilliness, loſs of appetite, languor, &c. The effects of damp linen, even in ſtrong habits, ſhew the pernicious tendency of moiſture applied to the ſkin. This is generally explained by the cold occaſioned by the evaporation, but a much greater degree of cold is borne without inconvenience. The ſenſations produced by a damp air are ſimilar, though leſs in degree, to those produced by damp linen.

Phyſicians, I have already had occaſion to obſerve, have not truſted to diet and exerciſe alone during the intervals of the

his theory of rain. Every cool breeze much charged with moisture, must, by mixing with the heated air of the city, occasion a deposition of water, since it is found that the mean temperature will not enable the airs to hold the same quantity in solution which they do before they are mixed. There is no part of this country in which fogs are so common or so great as in London. I have myself observed, from an eminence, that when a sea breeze was passing over the country, wherever it met with the heated air of a village, a considerable deposition of moisture took place. So that from each village, a train of fog, proportioned to its size, extended itself along the country, in other parts of which the air remained perfectly transparent. But the mixture of airs of different temperatures, without going so far as to occasion fog, is often attended with a considerable degree of dampness, to which the delicate are extremely sensible, and which in common language has obtained the name of rawness.

gout. The remedies which have been found uſeful at this period, like thoſe recommended during the paroxyſms, may be divided into general and local. In the firſt place, of the general remedies.

The impropriety of employing general blood-letting at this period is ſo evident, that very few have recommended it. It would rarely have much effect in rendering the ſucceeding paroxyſm milder, but would either by weakening the patient, tend to bring on atonic forms of the diſeaſe, or by increaſing plethora, particularly in the young, to increaſe the violence and frequency of the inflammatory paroxyſms.

Phyſicians have been more divided in their opinions concerning the uſe of cathartics at this period. Hoffman thought that they might be employed a little before the acceſſion, for the purpoſe of preventing the fit, and even obſerves, that general blood-letting has been ſucceſsfully recommended with the ſame intention. Some recommend mild cathartics throughout the whole of the interval; Boerhaave and others, even thoſe of a draſtic nature; but Sydenham has declared againſt them all at this period as well as during the paroxyſm. There are ſimilar, though not ſo ſtrong objections to catharſis during the interval as to general blood-letting; with this in addition, that the frequent uſe of cathartics tends to weaken the ſtomach and bowels. In modern practice they are only recommended for the purpoſe of keeping the bowels regular, and thoſe are preferred which occaſion leaſt evacuation, aloes, rhubarb, magneſia, &c. The firſt, for reaſons which will afterwards appear, is objectionable in gouty caſes, where the conſtant uſe of a cathartic is neceſſary.

Many have endeavoured to ſupport the ſtrength by the Peruvian bark and other tonic medicines. Theſe at firſt view appear well adapted to the intervals of gout, but, notwith-

ſtanding what ſome have ſaid of their effects, they bear too near a reſemblance to the ſpecifics which have done ſo much miſchief in this diſeaſe, to be generally employed. The beſt phyſicians either do not mention them among the remedies of gout, or ſpeak of them as very doubtful means.

Among the tonics which have been recommended in the interval, the cold bath holds a principal place; even this is a doubtful remedy, except in the young and vigorous, or at leaſt in thoſe who enjoy long intervals. Employed near the time of acceſſion, it has, by preventing the regular paroxyſm, induced atonic ſymptoms.

The opinions of phyſicians reſpecting the warm bath during the intervals, are various. Sydenham and ſome other of the beſt writers take no notice of it. The tepid bath, however, it is now aſcertained, has not the debilitating tendency formerly aſcribed to it, and in thoſe who have become cripples from the gout, it is often uſed with great advantage. No remedy has been ſo much celebrated in this country as the Bath waters, uſed both externally and internally, for the purpoſe of fixing the gout when it ſhews a tendency to become irregular; and for reſtoring the ſtrength and the uſe of the limbs after ſevere fits. It is not eaſy to aſcertain with accuracy how far their reputation is well-founded. That they are often of uſe in ſuch caſes is certain. The hot waters of Bourbon,* the waters of Aix-la-Chapelle, the Piermont and Seltzer, and many other mineral waters, have been celebrated in the gout, but do not ſeem equal to thoſe of Bath. Drinking water impregnated with carbonic acid gas has been warmly recommended. It appears to be a good and innocent ſtomachic.

Various medicines have been employed with a view to

* See a Treatise, intitled Bains de Bourbon, by Dr. Aubery.

correct or expel the morbific matter to which we have seen the gout has so generally been attributed. Many of them, sulphur, ammonia, &c.* seem more safe than effectual. They have indeed been so seldom attended with success, that their employment has not been sufficiently general, perhaps, to ascertain their safety. There are some of them, however, particularly antimonial and mercurial medicines, whose effects we have more reason to dread.

The accounts which Cheyne and others give us of the effects of mercury in gouty cases, speak but little in its favour. "The fact is," says he, "that by a free and full "salivation gouty people have been freed from all the symp-"toms of the complaint for several years; but it is also a "matter of fact and experience, that a full and free saliva-"tion does so break, rend, and tear all the smallest, tendereſt, "and fineſt veſſels and fibres, that the body becomes in a "worse state, in respect to the future fits, than it would have "been in several years' time under the common symptoms."

In the *Observations interessans sur la Cure de la Goute*, and other works, mercurials are much recommended during the paroxysm. But I have not taken notice of them among the remedies of that period, as by the practitioners of this country at least they are very generally laid aside.

The reader will find antimonial medicines recommended by Dr. Cadogan, Dr. Jeans, and others. But it is justly observed by Dr. Falkconer, that they have been used with-

* There is some account of the alledged success of sulphur water in gouty cases, and the mode of preparing it, in the eleventh volume of the Medical Commentaries. For medicines employed with a view to prevent a return of the paroxysm, see the first volume of the Acta Reg. Soc. Med. Haf. A paper above referred to, by Dr. Clark, and one by Dr. Guthrie, in the fifth volume of the Medical Comment.

out advantage, and that their continued uſe is to be feared, as they tend to hurt the ſtomach.

With reſpect to the local remedies at this period, there are only two which deſerve notice; local blood-letting and iſſues. It was common, formerly, to apply leeches to, or ſcarify the feet when a fit of the gout was expected, eſpecially if the habit was plethoric, or any accuſtomed diſcharge had been checked. How far this practice, bliſtering, or other ſuch means, might prove ſucceſsful in preventing the recurrence of gout, it is difficult to ſay, for the hazard of all means of this kind has baniſhed them from modern practice. We have every reaſon to believe that in proportion as they prevented the regular, they would tend to induce the atonic, forms of the diſeaſe.

It is obſerved that when from the breaking of gouty tumors or other accidents, ulcers are formed and continue to diſcharge, the intervals of the gout are prolonged and the paroxyſms rendered milder without any diſpoſition being given to irregular gout. This circumſtance ſuggeſted to phyſicians the propriety of making artificial ulcers in the legs, which are ſometimes productive of the ſame good effects. It is neceſſary, however, for a gouty patient who has once ſubmitted to this remedy, to keep up the diſcharge for life. The worſt conſequences often follow the cloſing of iſſues, or even of ſpontaneous ſores, which have continued for a conſiderable time. In the latter caſe, indeed, iſſues ſhould be ſubſtituted for the ſore, if this precaution is neglected, the fits often become as frequent as they were, or more ſo, and generally ſhew a greater tendency to become irregular. It ſeems to be an obſervation, with few exceptions, that if gouty paroxyſms be interrupted for ſome time, or rendered leſs frequent, by whatever cauſe, and in conſequence of its

removal or other means, they recur with their uſual frequency, they generally aſſume a more dangerous form.

Some aſcribe the effects of iſſues to the irritatiou they occaſion, and recommend frequently ſhifting their place. Their effects, however, ſeem, in a great meaſure at leaſt, to depend on the evacuation, and frequently ſhifting them is very troubleſome.

It is hardly neceſſary to add to what has been ſaid of the treatment during the interval, that carefully avoiding the various occaſional cauſes forms an eſſential part of it.

Such is the treatment of regular gout. Every age has tended to ſimplify it; and moſt of the numerous liſt of medicines, once ſo generally recommended in this diſeaſe, are now regarded either as uſeleſs or hurtful.

Before leaving the treatment of regular gout, it will be uſeful to make a few obſervations on ſome of the ſpecifics which have been recommended for its radical cure. Moſt of theſe are compoſed of ingredients which ſome phyſicians ſtill venture to prescribe to a certain extent, and many of them are medicines on which the older phyſicians placed their chief reliance.

The compoſition of the powder termed Portland powder, from the ſuppoſed cure of the Duke of Portland, is now known.* It was uſed in gouty caſes as early as the days of

* It is composed of equal parts of the root of that species of bithwort termed aristolochia rotunda, of gentian root, of the tops and leaves of germander, ground pine, and centaury, dried, reduced to powder, and sifted. A dram of this powder is taken every morning for three months, three-fourths of a dram, or according to some, two scruples, for three months longer, and for the ensuing six months, half a dram.

Galen, ſince whoſe time it has often been in high repute, and as often fallen into diſuſe.*

Its effects are now very well aſcertained; thoſe who have uſed it according to the directions have been freed from their gouty pains, but there is hardly an inſtance in which the patient ſurvived its uſe above a few years.†

Although moſt phyſicians have wholly diſcarded a medicine ſo generally productive of the worſt effects, yet ſome, Dr. Jeans, Dr Gardner and others, have ventured to recommend it in ſmaller doſes, eſpecially to young arthritics. This is at leaſt a precarious practice, though perhaps, not more ſo than the daily uſe of other bitters and aromatics. The older phyſicians laid it down as a rule, that this medicine ſhould not be adminiſtered to thoſe who had been ſubject to gout above ſix or ſeven years.

Some believe that ſuch medicines are ſafer in infuſion than in ſubſtance. This is probably true, as the former is leſs powerful; but there is reaſon to believe that it is only as it is ſo, that it is leſs pernicious. It does not ſeem to

* The reader may consult a paper, intituled an Inquiry into the Origin of the Gout Powder, by Dr. Clephane, in the 1st, vol. of the Med. Obs. and Inquiries.

† "I myself," says Dr. Cadogan, "observed between fifty and "ſixty of the advocates of the Portland powder, some my patients, "some my acquaintance or neighbours, who were apparently cured "by it for a little while, but in less than six years' time they all "died to a man." And Dr. Cullen observes, "In every instance "which I have known of the exhibition of the Portland powder "for the length of time prescribed, the persons who had taken "it were indeed afterwards free from any inflammatory affections "of the joints, but they were affected with many symptoms of "the atonic gout, and all, soon after finishing their course of the "medicine, have been attacked with apoplexy, asthma, or dropsy, "which proved fatal."

be the medicine, but the circumſtance of checking the gout, that occaſions the fatal effects, and it is more than probable, that the uſe of any means capable of preventing the return of the regular fits would be attended with the ſame conſequences. We have every reaſon to believe, that a perſon free from the gout might take the Portland powder, not for one year only, but for many years without fatal effects.

It was obſerved above, that mercury has been recommended in the gout. It has formed the baſis of ſome ſpecifics. The famous pills of Belloſte are a mercurial preparation. The reader will find many cures by this ſpecific related in the ſecond volume of Belloſte's Hoſpital Surgeon. There is every reaſon to believe, that mercury is no ſafer a ſpecific in gout than the preceding. We have ſeen Dr. Cheyne's account of its effects. In the incautious hands of the empiric it is ſtill more to be feared. Hoffman relates the fatal effects of a mercurial ſpecific for the gout.

The alkalis have been much celebrated as ſpecifics in this diſeaſe. From the frequent concurrence of gout and gravel, ſince alkaline medicines have been ſo much uſed in the latter diſeaſe, they have often been employed in gouty habits. It is very generally admitted that they tend to prolong the interval, whether with ſafety or not ſeems ſtill undecided. We have reaſon from analogy to dread every medicine having this tendency. If they act merely by correcting acidity, which we know frequently excites the gouty paroxyſm, they may be leſs pernicious than thoſe that make a more direct impreſſion on the ſyſtem. Many alkaline ſpecifics have at different times appeared; but it is rather in calculous, than in gouty caſes, that they have been celebrated. Lieutaud, M'Bride, and other writers, however, ſpeak with confidence of their effects in the latter diſeaſe. Liger in particular recommends them in the ſtrongeſt terms. Dr. Cullen, who wrote ſince theſe

authors, although he thinks favourably of them, ſpeaks with leſs confidence both of their ſucceſs and ſafety. The long continued uſe of the alkalis has induced a bad habit of body, emaciation, and debility. The pure alkalis combined with oil, the form in which Liger uſed them, are ſaid to be more effectual, but at the ſame time more pernicious, than the alkaline carbonates.

It would be ſpending time to little purpoſe to enquire into the merits of many other medicines of this kind. The effects of all of them are ſimilar. We may therefore permit the ſpirituous infuſion of guaiacum, the Swiſs tincture, Dr. Hill's elixir of Bardana, the Liege medicine,* Mr. Drake's ſpecific, &c. to remain in the ſilence into which they are now ſunk. A ſpecific which has lately come into general uſe in this country, termed the *Eau Medicinale* of Huſſon, differs from the preceding in being chiefly recommended during the paroxyſm. For an account of this medicine, I muſt refer the reader to the various publications on it. Reſpecting its efficacy in leſſening the ſeverity and duration of the paroxyſm there is no doubt, but there muſt long be much doubt reſpecting its ſafety. Thoſe who are acquainted with the hiſtory of the gout will not be very ſanguine in their expectations from it. Its immediate effects are often very violent. I have known ſeveral inſtances in which its uſe was ſucceeded by ſymptoms of atonic gout. In one inſtance related to me by the patient's brother, it appeared to prove fatal.

2. Of the Treatment of Irregular Gout.

It is evident that this part of the ſubject cannot be here

* This medicine was proposed by Dr. Le Fever, and at one time made much noise. See a pamphlet respecting it by the Rev. Mr. Marshall, and another by Mr. Drake, who was also a proprietor of a gouty specific.

conſidered at length, for that would lead to the treatment of almoſt all the diſeaſes to which an arthritic is ſubject. All that can be attempted, therefore, is to lay down the general principles on which the treatment of the chief varieties of irregular gout is founded.

In detailing the ſymptoms, I adopted Dr. Cullen's diviſion of irregular gout, into atonic, retrocedent, and miſplaced. I ſhall follow the ſame order in conſidering the treatment.

Of the Treatment of Atonic Gout.

By far the moſt common form of atonic gout is that of dyſpepſia. In laying down the principles of the treatment of atonic gout, therefore, I ſhall keep this form of it in view, and afterwards make a few obſervations peculiarly applicable to its other forms. This method is more diſtinct than endeavouring at the ſame time to lay down the treatment of affections ſo diſſimilar.

Even thoſe who have not been long afflicted with the gout generally complain of flatulence and other dyſpeptic ſymptoms during the interval. While theſe ſymptoms are moderate, alleviated by a proper attention to diet and exerciſe, and do not interfere with the return of the regular paroxyſms, they do not deſerve the name of atonic gout. But, however ſlight, as ſoon as they have this effect, they are to be regarded as a diſeaſe of importance.

It ſeems at firſt view ſurpriſing that the dyſpepſia of gouty patients ſhould be attended with ſo much greater danger than dyſpepſia under any other circumſtances. We ſee it in people of all ages and temperaments, occaſioning pain, ſickneſs, and even ſyncope, yet attended with little or no danger. This ſeems to be explained by other tendencies of gouty habits. When we conſider the debility which generally precedes death in gouty dyſpepſia, the manner of the death, and the

diſeaſes to which the habit is diſpoſed, there is reaſon to believe that the immediate cauſe of death, in ſuch caſes, is that affection of the brain, which has been termed nervous apoplexy. Were we to enter at large on the ſubject of apoplexy, we ſhould find additional reaſons for this opinion.

We have two things in view in treating the atonic gout; to remove the ſymptoms of debility, and to reſtore the regular fits. If we ſucceed in either of theſe indications, the other for the moſt part is anſwered at the ſame time.

Of removing the Symptoms of Debility in Atonic Gout.

For this purpoſe Sydenham relies more on regimen than medicines, and juſtly obſerves, that all the means we can employ will be of little avail if the patient neglects exerciſe. A proper attention to diet is no leſs neceſſary. What I ſaid of theſe in ſpeaking of regular gout is applicable here.

Cold bathing has been recommended. There are two circumſtances, however, which render it a doubtful practice. It is apt to overpower a debilitated habit; and to prevent the acceſſion of regular fits, if employed when they are about to appear. It is never to be recommended, if, from pains of the limbs or other circumſtances, there is reaſon to expect a fit. Some, indeed, have been ſo much afraid of this tendency of the cold bath, that they have wholly condemned its uſe in every form and period of the diſeaſe. The patient ought to avoid all kinds of fatigue before going into the water, to remain in it a very ſhort time, and as ſoon as he comes out to have the whole body rubbed with dry cloths. If by theſe means he feels no glow of heat, or, although he feels this in ſome degree, if his appetite and ſpirits are not improved by the bath, there can be no doubt of the impropriety of continuing it.

The action of the bowels, which are often languid, ſhould be promoted by cathartics of the gentleſt kind, and of a warm invigorating nature. The body ſhould be moderately open, but purging is hurtful.

Emetics are only proper when the ſtomach is much loaded and ſhould ſeldom be repeated. If the ſtrength is much reduced, Dr. Muſgrave recommends wine inſtead of water to promote the vomiting.

But the medicines which hold the chief place in the treatment of atonic gout, are thoſe termed ſtomachic, which conſiſt of cordials, bitters, aromatics, and aſtringents. When the dyſpeptic ſymptoms amount to atonic gout, it is neceſſary to increaſe the quantity of wine. Sydenham obſerves, that after trying many things to remove the languor and debility of the ſtomach, he found nothing anſwer ſo well as a ſmall draught of Canary wine.

But in caſes which threaten immediate danger, wine is often inſufficient. In that extreme pain of the ſtomach, under which gouty patients frequently expire, a glaſs of ſtrong brandy or uſquebaugh, or even more, ſwallowed ſpeedily, is the beſt medicine. If theſe fail to relieve the pain, we muſt have recourſe to opium, taking care to counteract its effects on the bowels.

It is in that form of atonic gout which appears chiefly in debility of the ſtomach, that the occaſional uſe of bitters is ſtill recommended by many; but they approach too nearly to the nature of ſome of the ſepcifics above mentioned to be uſed with freedom. "For ſtrengthening the ſtomach," Dr. Cullen obſerves, "bitters and the Peruvian bark have been "employed, but care muſt be taken that they be not conſtant-"ly employed for any great length of time." Simple aſtringents are ſafer. There is none ſo much celebrated as iron. Muſgrave uſed the ruſt, which he regarded as a powerful

means of ſtrengthening the ſtomach in gouty habits. Dr. Cullen alſo prefers the ruſt, others the tincture. With reſpect to aromatics, they generally enter into the compoſition of cordials, and do not appear more hurtful than the other ingredients of ſuch medicines.

Iſſues, as appears from what I have already had occaſion to ſay, are often ſerviceable in atonic gout.

I may here refer to what was ſaid of the Bath and other mineral waters in caſes of gouty debility. "After all this "management," ſays Dr. Cheyne, "ſhould the gout ſtill "continue in the ſtomach and become habitual, nothing but "a long courſe of the Bath waters, with ſteel bitters and "gentle ſtomachic purges, a regular diet, and proper exer-"ciſe, can effectually remove it."

In obſtinate caſes, if there is any means of relief, it is the change to a warm climate.

Of the means which tend to excite inflammation in the extremities.

I have had occaſion to mention emetics, as recommended for another purpoſe; they have alſo been found ſerviceable in this way; the gout after their operation ſometimes appearing in the extremities. It is remarkable, that the very means which are moſt apt to drive the gout from the joints when it has already fixed itſelf there, and conſequently occaſion the atonic forms of the diſeaſe, are in thoſe forms, among the moſt powerful in inducing the regular paroxyſm.

The chief of theſe is the application of large bliſters to the extremities. If the gout does not appear within a day or two after their application, the diſcharge ſhould be kept up from ſome of the bliſtered parts, which Dr. Muſgrave obſerves, will either bring the gout to the joints, or otherwiſe relieve the urgent ſymptoms.

With the ſame view a variety of rubefacients have been recommended, muſtard poultices, bathing the lower extremities with hot wine or diſtilled ſpirits in which acrid ſubſtances have been diſſolved, &c. Some recommend applying rubefacients previous to bliſters. The reader will perceive that the uſe of theſe remedies requires ſome caution. If they are applied after any pains have been felt in the joints, which generally indicate a tendency in the gout to fix there, they may do harm.

Exerciſe, particularly walking, is alſo a means of bringing the gout to the extremities. When the patient is unable to walk, he may ride on horſeback or go in a carriage, when no exerciſe can be borne, Boerhaave adviſes, that he ſhould be kept warm in bed and drink diaphoretic and aromatic liquors.

With theſe means, thoſe of invigorating the ſyſtem are to be combined. Drinking a bottle of wine has been known to bring the gout to the feet, when every thing the phyſician could think of had failed.*

Such is the manner of treating atonic gout when it aſſumes the form of dyſpepſia; and almoſt every thing, that has been ſaid, will be found applicable to its other varieties. A very few obſervations on theſe will be ſufficient.

The gouty, we have ſeen, are ſubject to diſeaſes of the inteſtines as well as ſtomach, particularly colic and diarrhœa. In arthritic colic all the means juſt mentioned are proper, but cathartics, more neceſſary. Fomentations of the belly,†

* See Van Swieten's Commentary on Boerhaave's Aphorisms on the Gout.

† In colic I have seen much relief obtained from flannel, dipt in brandy and sprinkled with black pepper, applied to the belly.

and other meafures recommended in ordinary cases of colic are to be employed in conjunction with thofe which tend to fix the gout in the joints.

A fimilar obfervation applies to gouty diarrhœa, whether bilious or not. The means we have been confidering are to be combined with thofe employed in ordinary cafes of diarrhœa. If the diarrhœa evidently arifes from an accumulation of acrid matter in the inteftines, it is neceffary to promote its difcharge by warm cathartics and copious draughts of thin broth, before we endeavour to check the action of the bowels. If the ftomach is much loaded, an emetic will be of fervice, both by preventing the further introduction of irritating matter into the inteftines, and by tending to allay their motion. But when the diarrhœa is bilious, emetics fhould be avoided. When the inteftines are fufficiently cleared, it may be allayed by aftringents and opiates. Mufgrave and Sydenham did not hefitate to recommend the latter, though fome exprefs fears of them, not however, as far as I can judge, on fufficient grounds.

Exercife of various kinds tends at once to check the diarrhœa and bring the gout to the extremities. If exercife and laudanum fail, fays Sydenham, the only remedy I know of is to bring out a fweat, both by external and internal means; if this be done morning and night for two or three days together, and for two or three hours each time, the diarrhœa is generally checked, and the gout often fixed in the joints.

When the ftools affume a dyfenteric appearance, ftrong cordials and meats are pernicious. The diet muft then be mild, and the ufe of aftringents avoided. In fuch cafes the beft plan feems to be, to procure a difcharge of the irritating matter, from which the dyfenteric purging generally arifes, by mild cathartics, particularly ipecacuanha in fmall dofes,

and then allay the pain and irritation by ſmall and repeated doſes of opium with mucilage.*

The treatment of gouty aſthma differs from that of the common aſthma only in the addition of means for bringing the gout to the extremities.

The ſame may be ſaid of the treatment of ſyncope in gouty habits, except that the cordials ſhould be of the moſt powerful kind; they ſhould be given by clyſter during the fit, and drank freely during the intervals. There is much danger in attempting to throw any thing into the ſtomach while ſyncope laſts; when the patient does not make the effort to ſwallow, it may fall into the trachea. I have twice ſeen patients in a ſtate of inſenſibility ſuffocated by this accident.

In gouty palſy and apoplexy the treatment differs ſtill leſs from that of other caſes of theſe diſeaſes; for in palſy and apoplexy the means employed for bringing the gout to the extremities are neceſſary, although there be no gout in the habit, and conſequently where there is, ſerve a double purpoſe. In many caſes of theſe diſeaſes it is difficult to aſcertain the propriety of having recourſe to evacuations. To point out the various circumſtances which here influence our judgment, would lead us into too long a digreſſion, indeed to a review of almoſt the whole treatment of idiopathic apoplexy; but it may upon the whole be obſerved, that evacuations ſhould be uſed more ſparingly in gouty, than in other habits.

When the patient is afflicted with flying pains in various parts of the body, or quinſy, inflamed eyes, tooth-ach, &c. while the common means are employed, as in the preceding caſes, we hope for a cure chiefly by bringing the gout to the

*Se e the Treatment of Dysentery in the last section of this volume.

joints. The reader will infer from what has been ſaid, that iſſues are often ſerviceable in ſuch caſes, in which I have myſelf ſeen the beſt effects from them.

The retrocedent gout is even more dangerous than the atonic, becauſe the means of relief are generally more confined. It would appear at firſt ſight, that as the danger ariſes from the gout leaving the extremities and affecting ſome internal part, we ſhould conſtantly have recourſe to the means above pointed out, for bringing it back to the former. But I have already had occaſion to obſerve, that although theſe remedies often ſucceed in bringing the gout to the joints when they are wholly free from pain, yet if there be any remains of pain in them, which frequently happens in retrocedent gout, they will generally render the retroceſſion more complete, ſo that it is only when the pain is wholly removed that they can be employed.

When the ſtomach is affected, recourſe muſt immediately be had to the ſtrongeſt cordials, ſtrong wines, or diſtilled ſpirits, with aromatics, given warm. The medicines termed antiſpaſmodics have been much employed in this form of the diſeaſe. Many give aſafœtida, muſk, and ammonia, but the medicines of this claſs, moſt to be depended on, are ether, and opium. If vomiting comes on, it ſhould be encouraged by draughts of warm wine till the ſtomach is cleared, and then allayed by a doſe of opium and camphor. When the pains of the joints ſuddenly receded, and were followed by oppreſſion, ſickneſs, and vomiting, Sydenham uſed to drink ſome diluting liquor to promote the vomiting, and afterwards take eighteen drops of laudanum in Canary wine; he then went to bed and endeavoured to compoſe himſelf to reſt. By theſe means, he aſſures us, he has often been almoſt ſnatched from death.

Mufgrave recommends blood-letting in the afthma of retrocedent gout when the patient is plethoric. But this which has often done fo much harm in ordinary cafes of afthma, is ftill more to be dreaded here. In fhort, the ufual means employed in afthma muft be had recourfe to, with this caution, that in proportion as the habit is gouty it is of the greater confequence to fave the ftrength. Similar obfervations apply to all the other forms of retrocedent, as well as atonic, gout, diarrhœa, colic, apoplexy, palfy, &c.

From what has been faid of the third fpecies of irregular gout, the mifplaced, it appears, that the difeafes which have been known by this name are nothing more than fome of the phlegmafiæ we have been confidering, fupervening in a gouty habit; and the only thing, peculiar in their mode of treatment, is, that evacuations muft be employed with more caution than in other cafes of phlegmafiæ.

The gout is frequently complicated with other difeafes. Its fits then often become frequent and irregular, and refift attention to diet and other means, in ordinary cafes found to relieve them. All that can then be done is, as far as the cafe admits of it, to combine the modes of treatment fuited to both difeafes. When this cannot in any degree be done, the moft urgent demands our firft attention. The prefence of each will generally modify the treatment of the other, and much muft be left to the difcernment of the phyfician after he is made acquainted with all that can be faid of fuch cafes.*

* For a very peculiar kind of irregular gout, which I do not find mentioned by any author but Liger, and those who mention it from his Treatise, the reader is referred to the 369th page of his work. I have not quoted any part of his account, as it is very vague. Liger, indeed, has scarcely treated any part of the subject with precision.

BOOK II.

OF THE HÆMORRHAGIÆ FEBRILES.

We are now to confider the fecond order of fymptomatic fevers, which has been defined,

Symptomatic fever, in which the local difeafe is a flow of blood not arifing from external injury.

In this order the difeafes are fo fimple, and, both in their fymptoms and mode of cure, fo much refemble each other, that it is unneceffary to confider them feparately. There is one difeafe, indeed, arranged by Dr. Cullen in this order, as a fequela of hæmoptyfis, (the phthifis pulmonalis) which it will be neceffary particularly to confider, as it is one of greater confequence and more complicated, both in its fymptoms and mode of treatment, than thofe with which it is arranged, and indeed has very little in common with them.

In treating of hemorrhagy in general, I fhall point out the peculiarities of its principal genera.

Dr. Cullen arranges under this order only four genera; the epiftaxis, or bleeding from the nofe; the hæmoptyfis, or coughing of blood from the lungs; the hæmorrhois, or difcharge of blood from fmall tumors about the anus; and the menorrhagia, or difcharge of blood from the uterus. To thefe, moft authors add the hæmatemefis, or vomiting of blood, and the hæmaturia, or bloody urine, which Dr. Cullen regards as

ſeldom, if ever, primary diſeaſes. Some authors have ſtill added other genera, hemorrhagy from the gums for inſtance, but this is endleſs; we might with equal reaſon regard hemorrhagy from the fauces, the ſkin, &c. as diſtinct genera. Theſe rarely occur, and are generally ſymptomatic. The hemorrhagies I ſhall chiefly have in view in the following obſervations are the four genera of Dr. Cullen, and the hæmatemeſis and hæmaturia.

CHAP. I.

Of the Symptoms of the Hæmorrhagiæ Febriles.

THE ſymptoms of the hæmorrhagiæ febriles may be divided into thoſe which precede the flow of blood, and thoſe which accompany it.

The ſymptoms which precede conſiderable hemorrhagy, reſemble thoſe which appear at the commencement of the phlegmaſiæ. A cold fit comes on, the ſkin being conſtricted and the extremities cold, with wearineſs of the limbs, pains of the back and head, coſtiveneſs, and other febrile ſymptoms; and the hot fit, in which the pulſe is frequent and full, and in many caſes hard, is often formed before the blood appears. Theſe ſymptoms are moſt remarkable before internal hemorrhagy. They are generally attended with a train of local ſymptoms, affecting the part from which the blood is about to flow.

The patient often complains of a ſenſe of heat, fullneſs,

and tenſion, ſometimes of weight and pains of different kinds in it and the parts about it; and when it is external we can often obſerve ſome degree of redneſs and ſwelling in it. But the local ſymptoms preceding hemorrhagies, are very various, and differ according to the ſituation, nature, and office of the diſeaſed part.

Before the appearance of epiſtaxis, we often obſerve all the ſymptoms occaſioned by an unuſual determination of blood to the head, ſtrong beating of the arteries of the head and neck, fluſhing and ſwelling of the face, &c. The whole head, Hoffman obſerves, is ſometimes much ſwelled, the noſtrils being hot and dry.

Hæmoptyſis is preceded by affections of the thorax. The patient often complains of a ſenſe of weight, anxiety, and pains about the breaſt, with ſome degree of dyſpnœa, often of a ſenſe of heat, ſometimes under the ſternum, ſometimes moving from place to place, and a little before the blood appears, there is frequently a ſaltiſh taſte in the mouth. At length a tickling at the top of the larynx, now and then extending itſelf along the trachea, occaſions hawking, which brings up a little blood of a florid colour and more or leſs frothy. As the quantity of blood increaſes, there is a rattling noiſe in the trachea before it is brought up, and then it comes leſs by hawking than by coughing, which is ſometimes the caſe from the firſt.

It now and then requires attention to determine whether the blood comes from the lungs, ſtomach, or fauces. The manner in which it comes generally indicates from what part. If from the ſtomach, it is vomited, not coughed; if from the fauces or noſe, it is often brought up without either hawking or coughing; or if from its falling upon, and irritating the glottis, ſome degree of theſe take place, the hiſtory of the caſe and other ſymptoms will generally point out

its ſource; which may often be diſcovered by inſpecting the fauces. The blood from the lungs is generally florid and frothy, from the ſtomach and fauces of a dark colour, and unmixed with air.*

Blood is ſeldom, perhaps never, diſcharged from the lower part of the rectum till ſmall tumors are formed about the anus, either externally or on the inner coats of the inteſtine a ſhort way above the anus. Theſe tumors are more or leſs diſtinct. Sometimes there is a general tumefaction of the anus. The tumors are termed hemorrhoides, (piles); they ſometimes continue to teaſe the patient without diſcharging blood, and are then termed the blind piles, hemorrhoides cæcæ. They often ſubſide, and in a ſhort time again make their appearance, ſometimes continuing to return at nearly equal periods. When they have frequently returned they generally become permanent, but only occaſionally diſcharge blood.

The appearance of piles is often preceded by a conſiderable degree of fever. The mouth and fauces in particular are dry, the ſkin conſtricted, and the urine at once pale and in ſmall quantity. The local ſymptoms are more numerous and varied than thoſe which precede other hemorrhagies. Vertigo, head-ach, ſtupor, ſickneſs, and other ſymptoms of dyſpepſia, occaſionally appear, particularly flatulence, and griping pains of the bowels, and not unfrequently there is a fullneſs of the cheſt, with ſome degree of dyſpnœa. There is often alſo pain or a ſenſe of weight and oppreſſion in the back and loins, and the limbs are ſometimes affected with numbneſs. With theſe ſymptoms there is generally pain about the anus, with heat and itching, and often a ſenſe of

* See the 841st and following paragraphs of Dr. Cullen's First Lines.

weight extending to the perineum, accompanied with a frequent defire to empty the rectum and bladder. The ftools are fometimes bilious, fometimes mucous, and many, particularly old people, are fubject to prolapfus ani; but thefe laft fymptoms are often rather the caufes, than merely preceding fymptoms, of piles.

The degree of the foregoing fymptoms is very various in different cafes, and a flight attack of piles very frequently comes on with no other uneafinefs than fome irritation about the anus.

A ferous difcharge from the anus, accompanied with fome degree of fwelling, now and then precedes the piles, and fometimes comes in place of them and the bleeding, relieving the foregoing fymptoms, though not fo quickly. The difeafe has then been called the hæmorrhois alba.

The fymptoms preceding the menorrhagia are fimilar to thofe which precede the hæmorrhois, but the pains of the back, loins and belly are often much more fevere. I have often feen them fuch as to occafion fyncope. As the menftrual difcharge is frequently preceded by confiderable pain, and is more or lefs irregular, that is, flows in greater quantity and longer at one time than another in moft women, who notwithftanding enjoy a good ftate of health, every little excefs is not to be regarded as a cafe of menorrhagia. It is always, however, to be regarded as fuch, when coagula are formed.

The hæmatemefis, or vomiting of blood, is preceded by affections of the ftomach and parts in its neighbourhood. There is often pain and tenfion of the left hypochondrium with much anxiety, and a fenfe of tightnefs in the cheft.

Bloody urine, when independent of calculous affections, is often preceded by no remarkable fymptom. Sometimes

pains of the back and conſiderable uneaſineſs in the region of the kidney, with nauſea, denote its approach.

All hemorrhagies, indeed, eſpecially when inconſiderable, occaſionally make their appearance without any preceding ſymptom. They are more uniformly preceded by the local than the general ſymptoms.

There is a ſpecies of hemorrhagy termed by noſologiſts paſſive, which is never preceded by ſymptoms of fever, that is, by any, ſymptomatic of the hemorrhagy. This ſpecies Dr. Cullen has properly arranged among the Locales. It either originates from external violence, which according to the nature of the part affected and the injury done to it, may either produce active or paſſive hemorrhagy, or is a ſymptom of diſeaſes of debility, ſcurvy, typhus, &c. It has few attendant ſymptoms, and its mode of treatment will ſufficiently appear from what will be ſaid of active hemorrhagy This, indeed, when the flow of blood induces a great degree of debility, may be ſaid to be changed into the former.

On the ſymptoms which attend the flow of blood in active hemorrhagy, a few words will be ſufficient. When the fever has been conſiderable, it generally continues till the blood ceaſes, or nearly ceaſes, to flow. The ſame may be ſaid of the local ſymptoms, although in general there is an abatement of both ſoon after the blood appears, eſpecially if it flows freely. There is no hemorrhagy, perhaps, which ſo quickly relieves the ſymptoms which precede it, as the epiſtaxis.

When the loſs of blood is great, the patient complains of giddineſs and other ſymptoms of approaching ſyncope; every part of the body, particularly the face, becomes pale, and the pulſe weak and unſteady. If the hemorrhagy is

obſtinate and profuſe, the pulſe ceaſes altogether, complete ſyncope ſupervening. Previous to death, however, the patient generally falls into convulſions, which may be regarded as the laſt ſtage of fatal hemorrhagies. The tendency to convulſions is often indicated by ſubſultus tendinum and other ſpaſmodic affections.

The quantity of blood loſt is various, ſometimes amounting to many quarts; nor is the duration of the diſeaſe leſs ſo, from a few minutes to weeks or even months. The quantity of blood which may upon the whole be loſt, it is evident muſt depend as much on the duration of the hemorrhagy as the ſize and vigour of the patient. The blood aſſumes different appearances, according to the part from which it flows, the time which it has remained in any of the cavities, the degree of inflammatory diatheſis, and the age and habit of the patient. Blood from the lungs I have already had occaſion to obſerve, is more florid than from other parts, and mixed with air. If blood has lain for ſome time in any of the cavities, the bladder, rectum, uterus, &c. it aſſumes a dark colour, and often forms clots, ſometimes of ſo firm a conſiſtence as to reſemble fleſh. When there is much of the inflammatory diatheſis, on cooling it ſhews the buffy coat. If the patient be young, it appears of a looſe conſiſtence and full of red globules. In middle age, the globules are leſs numerous and the blood of a more adheſive conſiſtence. In old age it is more thin and watery; and ſtill more ſo in dropſical habits. In thoſe labouring under diſeaſes of great debility, it is thin and ſanious. In all caſes it becomes thinner as it continues to flow.

The diagnoſis of hemorrhagies is ſufficiently evident; on the prognoſis it will be neceſſary to make a few obſervations. In habits much reduced by previous diſeaſe or other cauſes, particularly in thoſe inclined to dropſy, and in advanced age,

even a moderate loſs of blood may prove dangerous. But whatever be the habit or age of the patient, if the blood flows profuſely, if the lips, nails, and other parts become pale, the extremities cold, and ſyncope ſupervene, the danger is very great. It is not to be overlooked, however, that ſyncope is often a means of checking hemorrhagy, for as the vis a tergo is nearly interrupted in ſyncope, the hemorrhagy generally ceaſes, and in the mean time the bleeding veſſels are often cloſed, partly by their own contraction and partly by the blood coagulating in them, ſo that, the feeble vis a tergo on recovery from the ſyncope being often inſufficient to overcome theſe obſtacles, for the preſent the hemorrhagy is removed.

The appearance of the blood aſſiſts the prognoſis. The firmer its conſiſtence, the greater the proportion of red globules, and the leſs conſiderable the buffy coat, the leſs is the danger. The danger is great when the blood becomes watery, and ſtill greater if it aſſumes a ſanious appearance.

The danger in hemorrhagies is not always proportioned to the loſs of blood, as they often indicate the approach or preſence of other diſeaſes. Few diſeaſes are leſs to be dreaded than epiſtaxis in children; but old people ſubject to it are in danger of apoplexy. Although the loſs of blood by hæmoptyſis be very inconſiderable, it is an alarming diſeaſe, becauſe it may indicate a tendency to ulceration of the lungs, or its actual preſence.

Some attention to the cauſes of hemorrhagy, we ſhall find, is neceſſary in collecting the prognoſis.

I have had occaſion to obſerve, that hemorrhagies are apt to return periodically, the prognoſis therefore is collected from the ſtate of the patient during the interval, as well as while the blood flows. If he enjoys his uſual health, has a good appetite, and does not loſe fleſh, there is little to be apprehended. But if he is low ſpirited and indolent, if the ap-

petite fails, and the countenance becomes pale and emaciated, particularly if dropſical ſymptoms appear, the danger is very great, unleſs the return of the hemorrhagy can be prevented.

CHAP. II.

Of the CAUSES *of the* HÆMORRHAGIÆ FEBRILES.

THE remote cauſes of hemorrhagy, like thoſe of the phlegmaſiæ, are very ſimple. Thoſe of a ſanguine habit, ſlender make, and delicate conſtitution, are moſt ſubject to hemorrhagy. The parts from which hemorrhagies moſt frequently happen, are thoſe, as might *a priori* have been ſuppoſed, in which the blood-veſſels are moſt numerous and delicate, the internal membrane of thenoſe, the lungs, &c.

Why different ages prediſpoſe to different hemorrhagies, it is more difficult to explain. Epiſtaxis is moſt common in children; hæmoptyſis from puberty to between thirty and forty; hæmorrhois from this period to about ſixty; and hemorrhagy from the kidneys and the head in advanced old age. There is no period of life, however, at which any hemorrhagy may not occur.*

* Various hypotheses have been proposed for the purpose of explaining this tendency to different hemorrhagies at the different periods of life. But as none of them are satisfactory, I shall not detain the reader with an account of them.

Like the phlegmaſiæ, hemorrhagies are moſt frequent in ſpring and autumn.

If we except periodical diſeaſes, we ſhall find none which leave behind them ſo ſtrong a prediſpoſition to future attacks, as hemorrhagies, which ſeems partly to ariſe from the ruptured veſſels and thoſe in their neighbourhood, in conſequence of the diſtenſion they have ſuffered, being left in a ſtate of debility, and conſequently ſubject to future diſtenſion; and partly from loſs of blood, as I have more than once had occaſion to obſerve,* diſpoſing to plethora, the powers of aſſimilation ſeeming conſtantly to prepare a quantity of blood proportioned to the demand for it.

Of the prediſpoſing cauſes of hemorrhagy, plethora is the moſt frequent; all the cauſes of which may be regarded as prediſpoſing cauſes of this diſeaſe.

It is a common obſervation, that thoſe hemorrhagies which ariſe from mere plethora, although they are very liable to return, are of all hemorrhagies, proceeding from internal cauſes, moſt eaſily removed, and moſt frequently ceaſe ſpontaneouſly; as might have been ſuppoſed, ſince here the diſeaſe for the time removes its cauſe.

In active hemorrhagy there ſeems always to be a rupture of one or more ſmall veſſels. It has been ſuppoſed, indeed, that an increaſed force of circulation may ſo dilate the excreting veſſels as to occaſion an effuſion of blood independently of rupture. This, however, appears extremely improbable. The phenomena of active hemorrhagy, indeed, are generally ſuch as could not ariſe from this cauſe, the effuſion of blood being ſudden and profuſe. Its remote cauſes are ſuch as tend to occaſion rupture of the veſſels. They all occaſion diſtenſion in the part from which the blood is about to

* Vol. i. p. 118, 119.

flow.* Beſides it ſeems often to flow only from one veſſel, the rupture of which relieves the reſt. Thus in epiſtaxis, the preceding fullneſs and redneſs are often equal in both noſtrils. It rarely happens, however, that an hemorrhagy from both takes place at the ſame time; the firſt veſſel which gives way in either noſtril relieves both. Paſſive hemorrhagy, properly ſo called, that for example which appears in diſeaſes of extreme debility, ſeems often to be the conſequence partly of relaxation and conſequent dilatation of the veſſels, and partly of tenuity of blood.

Dr. Cullen enumerates ſeven occaſional cauſes of hemorrhagy; namely, external heat; a conſiderable and ſudden diminution of the weight of the atmoſphere; whatever increaſes the force of the circulation; violent exerciſe of particular parts of the body; certain poſtures of the body or ligatures; a particular ſtate of certain veſſels from the frequent repetition of hemorrhagy; and laſtly, cold externally applied.

On comparing theſe cauſes of hemorrhagy with what has been ſaid, the manner in which they act will be ſufficiently obvious, with the exception of cold, whoſe modus operandi it is more difficult to trace. It ſeems to be chiefly by exciting ſome degree of ſynocha, that cold occaſions hemorrhagy, that is, by increaſing the vis a tergo.

Such are the cauſes of hemorrhagy in general. Certain hemorrhagies proceed from cauſes, particularly affecting the part from which the blood flows. An ulcer in the kidneys, ureters, bladder, ſtomach, inteſtines, &c. is not an uncommon cauſe of hemorrhagy. The contents of theſe cavities acquiring an irritating quality, or occaſioning too great diſtenſion, has often had the ſame effect. The laſt cauſe, often renewed

* Introduction to the Second Part.

hemorrhagy of the ſtomach and inteſtines. Sudden repletion of the ſtomach probably acts alſo by compreſſing the liver, thus tending to obſtruct the circulation through it, and conſequently oppoſe an obſtacle to the free return of the blood from the inteſtines. I know a perſon in whom a copious draught will at any time induce hemorrhagy from the inteſtines. A malconformation of the thorax very frequently proves a prediſpoſing cauſe of hæmoptyſis, and when to a conſiderable degree, may excite it. The ſame may be ſaid of preſſure from affections of neighbouring viſcera, &c. as in hæmoptyſis from ſchirrous liver, &c. Similar obſervations apply to other internal hemorrhagies.

CHAP. III.

Of the Treatment *of the* Hæmorrhagiæ Febriles.

Many ſeem to have regarded all ſpontaneous hemorrhagies as proceeding from a plethoric ſtate of the ſyſtem, and have maintained that no means ſhould be employed to check them, unleſs they are ſo profuſe as to be attended with danger. In theſe poſitions, however, many important circumſtances are overlooked, and it is generally better to correct the plethora by other means, than by permitting the hemorrhagy either to go on or to recur.*

* See Dr. Cullen's Observations on this subject in his First Lines.

The means of moderating or checking hemorrhagy, either act on the ſyſtem in general, or on the part from which the blood flows. From what has been ſaid of active hemorrhagy, the reader will perceive that the flow of blood is often ſupported by the febrile ſtate which attends it. A principal indication in active hemorrhagy, therefore, is to diminiſh excitement, and all the various means above pointed out for this purpoſe muſt occaſionally be employed. Thoſe which conſtitute what has been called the antiphlogiſtic regimen, are, with the exception of dilution, in all caſes eſſential. All muſcular exertion in particular muſt be avoided. Even exertion of mind is hurtful The patient muſt be kept quiet, and in the horizontal poſition, with the exception that the part, from which the blood flows, ſhould be raiſed as high as can conveniently be done; and the temperature ſhould be as low as can be borne without inconvenience. The regular excretion of the fæces is particularly to be attended to, and the means employed for this purpoſe muſt be ſuch as occaſion leaſt irritation.

In all caſes of active hemorrhagy the diet ſhould be ſcanty, and all kinds of animal food and fermented liquors forbidden. The patient in particular ſhould drink very little. Whatever he takes ſhould be cold. The uſe of acidulous fruit, cream of tartar, nitre, vegetable acids, and other refrigerants is beneficial.

It is often proper to employ more powerful means to leſſen the excitement. "I am ready to allow," Dr. Cullen obſerves, "that the practice of blood-letting in hemorrhagies has been often ſuperfluous, and ſometimes hurtful, by "making a greater evacuation than was neceſſary or ſafe. "At the ſame time I apprehend it is not for the mere "purpoſe of evacuating, that blood-letting is to be practiſed "in the cure of hemorrhagy, but that it is farther neceſſary

" for taking off the inflammatory diatheſis which prevails, " and the febrile ſpaſm that has been formed. Accordingly, " in the caſe of hemorrhagy, when the pulſe is not only " frequent, but hard and full, and does not become ſofter or " ſlower on the flowing of the blood, and when the effuſion " is profuſe, or threatens to become ſo, it appears to me " that blood-letting may be neceſſary, and I have often found " it uſeful. It ſeems probable alſo, that the particular cir- " cumſtances of veneſection may render it more powerful " for taking off the tenſion and inflammatory irritation, than " any gradual flow from an artery." Blood-letting may often be employed with advantage, even where the hemorrhagy is conſiderable, if the pulſe is ſtill hard, and it is of great importance from the nature of the part affected that the wound ſhould cloſe as quickly as poſſible.

Burserius and others have recommended blood to be taken during hemorrhagy from the parts in the neighbourhood of that from which the blood flows. We ſhall preſently have occaſion to conſider the effects of local blood-letting.

Authors differ in opinion reſpecting the employment of cathartics in hemorrhagy. With regard to the employment of draſtic or irritating cathartics, there cannot be two opinions; but many practitioners have maintained, that the exhibition of mild cathartics, ſo as to keep up a degree of diarrhœa, is uſeful, on the ſuppoſition that hemorrhagy often proceeds from tenuity of blood, which they endeavour to obviate by drawing off the ſerous part. As far as reſpects active hemorrhagies, this opinion ſeems to be falſe, as muſt appear from what has been ſaid of their cauſes, and on the other hand, in very exhauſted habits, where the hemorrhagy is more of the paſſive kind, and may, in part at leaſt, ariſe from morbid tenuity of the blood, to endeavour to relieve it, by inducing another evacuation, is

at leaſt a very precarious practice. The ſame obſervation applies to caſes in which active hemorrhagy continues till it exhauſts the ſtrength, and renders the blood thinner than it ought to be. Upon the whole it would ſeem, if we except hemorrhagy from the head, that, to prevent any accumulation of fæces is the chief, if not the only, purpoſe, for which cathartics ſhould be employed in theſe diſeaſes.

The ſame ideas which led to the uſe of cathartics, induced phyſicians to preſcribe diaphoretics in theſe diſeaſes. They had ſtill in view to carry off the thinner parts of the blood. Theſe, particularly ſuch as are of a refrigerant quality, although the theory which firſt led to their uſe has fallen into neglect, are employed with advantage for the purpoſe of relieving the febrile ſtate, which precedes and ſupports active hemorrhagy.

The older practitioners recommend a great variety of medicines for this purpoſe; acids, anodynes, diaſcordium, milfoil, veronica, nitre, camphor, &c. Antimony and ſaline preparations ſeem to be beſt ſuited to active hemorrhagy, and the nauſea occaſioned by the firſt is often uſeful here as in inflammation, by diminiſhing the vis a tergo.

Every means which has this effect tends to check the flow of blood. I have had occaſion to obſerve above, that the uſe of the digitalis is attended with leſs advantage in the phlegmaſiæ than might have been expected, and to ſtate the circumſtances from which this appears to ariſe. What was there ſaid, however, it will be evident, does not apply to hemorrhagy, in which all who have tried the effects of digitalis, will, I believe, confeſs, that it is a moſt valuable medicine. In all ſerious hemorrhagies it ſhould be given in ſufficient quantity conſiderably to leſſen the force and frequency of the pulſe.

Moſt of the means employed for leſſening the vis a tergo in hemorrhagy, may often be employed for removing the ſymptoms which precede, and thus preventing, the hemorrhagy. In this way we not only prevent the loſs of blood and other conſequences to be apprehended from a rupture of veſſels, but at the ſame time break the habit of the hemorrhagy, and thus leſſen the tendency to its recurrence. Theſe obſervations, it is evident, from what was ſaid in ſpeaking of the phlegmaſiæ, do not apply with equal force to the digitalis as to the other means we have been conſidering. Their effects, it is evident, will be increaſed by the local means which relieve diſtenſion in the part.

The reader will find opiates very generally recommended in hemorrhagy. He will readily perceive, from what has been ſaid, that an indiſcriminate uſe of them is inadmiſſible. They are improper while much of the inflammatory diatheſis remains, and the pulſe continues full and ſtrong. When this ſtate has been overcome by proper remedies, or the continuance of the diſeaſe, opiates, by allaying irritation, tend to check the flow of blood. When the vis a tergo is not much increaſed they may ſometimes be uſed with advantage at an earlier period, combined with thoſe medicines which obviate their ſtimulating quality, particularly antimonials. They are indicated with muſk and caſtor when ſubſultus tendinum and other ſpaſmodic affections ſupervene.

A variety of aſtringent medicines are given internally, for the purpoſe of conſtricting the veſſels, and thus checking the hemorrhagy. The vitriolic acid, is very generally uſed; alum is more powerful, and in hemorrhagy, is perhaps, upon the whole. the moſt valuable aſtringent we poſſeſs, particularly in menorrhagia and hemorrhagy from the ſtomach and bowels. It is not found of equal efficacy in hæmoptyſis. Oak galls, bark, iron, lead, &c. have alſo been much em-

ployed. If any of thefe is more powerful than alum, it is lead, the acetate of which has been greatly praifed. It is almoft unneceffary to caution againft the long continued ufe of this medicine, even in fmall dofes. Where it is of great importance to check the hemorrhagy, it may occafionally be exhibited with advantage. It fhould be given in combination with mucilage, or, fome tenacious extract, as far as poffible to obviate its effects on the ftomach and bowels.

The bark and fteel are chiefly indicated when the ftrength, from the continuance of the difeafe or other caufes, being greatly exhaufted, the difeafe partakes more of the paffive than active hemorrhagy, and then certain ftimulants, although poffeffed of no aftringency, will often fucceed. I have feen oil of turpentine ftop menorrhagia which had refifted the moft powerful aftringents for many weeks.

The older practitioners employed various means with a view to occafion congeftion in parts at a diftance from the feat of the hemorrhagy; warm clyfters, fomentations, baths, (which were often compofed of warm wine and other ftimulating ingredients) frictions, ligatures thrown round the limbs, &c.; at the fame time making refrigerant applications to the parts from which the blood flowed, or thofe in their immediate neighbourhood. It is evident that moft of the former fet of remedies (all the moft powerful of them) are of doubtful effect while much of the inflammatory diathefis prevails.

I have already had occafion to obferve, that fyncope is often ferviceable in checking hemorrhagy; it is improper, therefore, where the hemorrhagy is confiderable, to ufe means to prevent it. All kinds of cordials are on this account to be avoided. Strong odours, and every other means of roufing the patient, are improper; and if, from the fituation of the part, fome degree of the erect pofture has

been judged proper, the patient ſhould not be laid in the horizontal poſture with a view to prevent ſyncope. Theſe obſervations, however, do not apply when the hemorrhagy has become paſſive. Syncope is then attended with great danger, and muſt be prevented by the uſual means.

Many ſuperſtitious remedies have been employed, and by the impreſſion on the mind have ſometimes been ſerviceable; awe and dread being powerful means of leſſening the force of the circulation.

We are now to conſider the means which are applied to the ſeat of the diſeaſe, many of which ſeem to act by exciting the bleeding veſſels to contract.

The various aſtringents juſt mentioned are employed for this purpoſe, particularly alum and the acetate of lead. The ſulphate of zink is among the moſt powerful of this claſs of medicines. The reader will find a great variety of aſtringent applications enumerated by authors. Dr. Cullen obſerves, that the moſt powerful of all aſtringents in hemorrhagy, appears to him to be cokl. It is uſeful, we have ſeen, applied generally by an atmoſphere of a low temperature. A greater degree of it ought always to be applied as near as poſſible to the part affected, and when it can be done, to the part itſelf.

Preſſure is a powerful means of checking hemorrhagy, when it can be applied to the bleeding veſſels. In obſtinate hemorrhagy, where it can be done, the larger veſſels of the part may be ſecured by ligature.

Taking blood from, dry cupping, and bliſtering, the parts in the neighbourhood of thoſe from which the blood flows, is often attended with advantage in internal hemorrhagies, eſpecially when there is reaſon, from the ſymptoms, to

believe that the diſtenſion of the veſſels which precedes the hemorrhagy is not relieved.

Reſpecting the means by which the diſpoſition to hemorrhagy is counteracted, a few obſervations, in addition to what has been ſaid of its cauſes, will be ſufficient.

A plethoric ſtate of the ſyſtem, we have ſeen, is one of the moſt common of theſe cauſes; and when the hemorrhagy has frequently returned, this ſtate has almoſt always either been the original cauſe of the diſeaſe, or has been induced by it. To correct plethora, therefore, is our chief object during the intervals.

The means of anſwering this purpoſe I have already had occaſion to point out. They are either ſuch as diminiſh the ingeſta, increaſe the excreta, or give tone to the veſſels.

It is difficult to reſiſt the appetite for food, ſo that it is generally proper to recommend ſuch as contains a comparatively ſmall quantity of nutricious matter. It is always neceſſary, however, to pay attention to the patient's habits. The quantity of animal food he has been accuſtomed to muſt only be leſſened by degrees, and when a great degree of debility has been induced, a nouriſhing diet is often neceſſary, which, however, muſt be regarded only as a means of obviating preſent danger, and employed with caution. The ſame obſervation applies to the ſubſtitution of water for more nouriſhing and ſtimulating fluids.

The beſt and moſt effectual way of increaſing the excreta, is exerciſe.

Cold bathing and tonic medicines, by increaſing the power of the veſſels, tend to prevent plethora, and are doubly indicated when the loſs of blood has induced debility.

CHAP. IV.

Of Phthisis Pulmonalis.

Dr. Cullen arranges Phthisis Pulmonalis, as a sequela of hæmoptysis. He defines it,

"Corporis emaciatio et debilitas, cum tussi, febre hectica, "et plerumque expectoratione purulenta."*

He divides this disease into two varieties, the phthisis incipiens without purulent expectoration, and phthisis confirmata with purulent expectoration. Purulent expectoration, however, we shall find sometimes attends from the beginning, and in some cases never appears at all, the reason of which will be evident when we consider the causes of phthisis. I shall not therefore follow Dr. Cullen in this division, nor indeed, does it seem to serve any purpose.

* See the nosological observations on phthisis, in the appendix to this volume, under the genus pneumonia.

SECT. I.

Of the Symptoms of Phthiſis Pulmonalis.

PHTHISIS often makes its attack with very deceitful appearances, ſo that the patient is ſcarcely aware of his danger before the caſe is deſperate. The firſt ſymptom is frequently a ſlight cough, occaſioned, the patient ſuppoſes, not by any affection of the lungs, where he feels no uneaſineſs, but an uneaſy ſenſation about the larynx, which is readily aſcribed to cold. At an early period there is either no fever, or it is ſlight, and very different from hectic fever. The cough is either dry, or a little mucus is expectorated, as in common catarrh. Theſe ſymptoms give little trouble, and are expected to go off, as they have frequently done before, without any remedy. Notwithſtanding their mildneſs, however, they prove obſtinate, and gradually become more troubleſome. They are ſometimes from the firſt accompanied with pains of the cheſt, either wandering like ſtitches, or more obtuſe, and fixed under the ſternum, or in the ſides of the thorax.

In many caſes the diſeaſe comes on in a leſs equivocal form, with conſiderable difficulty of breathing, eſpecially on motion, and a more ſevere cough. Hæmoptyſis frequently attends from the beginning, and is often the firſt ſymptom which attracts notice. It is not uncommon, indeed, for hæmoptyſis to recur ſeveral times before it is accompanied with the ſymptoms of phthiſis. By degrees the expectorated

matter begins to aſſume the appearance of pus, and the febrile ſymptoms, that of hectic.

Hectic fever is a quotidian remittent, the chief, and ſometimes the only, exacerbation of which commences about five o'clock in the afternoon, often with ſlight chills, which generally continue for ſome time after the ſkin, to the feeling of another perſon, is warmer than natural. This exacerbation goes on increaſing till after midnight, the pulſe being ſeldom under 110, and often above it. About two o'clock in the morning a ſweat appears, chiefly on the breaſt, neck, and head, which relieves the febrile ſymptoms; and as the morning advances, the remiſſion becomes more diſtinct, affording the patient, who is ſcarcely ever perſuaded that his caſe is deſperate, an ill-founded hope. This remiſſion in ſome caſes continues till about five o'clock in the afternoon, when the exacerbation again commences. In other caſes there is another exacerbation about noon.*

The urine is high-coloured, and depoſites a copious light branny ſediment. The bowels are generally conſtipated. The thirſt, however, is not conſiderable, and the appetite

* "It has commonly been given as a part of the character of hectic fever," Dr. Cullen obſerves, "that an exacerbation of it commonly appears after the taking food; and it is true that dinner, which is taken at noon or after it, does seem to occasion an exacerbation. But this must not make us judge the mid-day exacerbation to be the effect of eating only, for I have often obſerved it to come on an hour before noon, and often some hours before dinner, which in this country at present is not taken till sometime after noon. It is, indeed, to be observed, that in almost every person the taking food occasions some degree of fever; but I am persuaded this would not appear so considerable in hectic, were it not that an exacerbation of fever is present from another cause, and accordingly the taking food in a morning has hardly any sensible effect."

generally continues good. The countenance is pale, with a circumſcribed redneſs on the cheeks, which is moſt remarkable during the exacerbations, and the body generally waſtes rapidly.

Various marks of debility gradually ſhew themſelves. The hair falls off, the nails are incurvated, the feet become œdematous; in women the menſtrual diſcharge ceaſes, and at length a colliquative diarrhœa comes on, which may be regarded as the forerunner of death.

There is ſeldom much head-ach at any period of the diſeaſe, and delirium, except towards the fatal termination, hardly ever appears; for the moſt part, indeed, the ſenſes are retained to the laſt, and, what is more ſurpriſing, the ſpirits and even the appetite. It has been obſerved, indeed, that the appetite is often better than uſual a few days before death.

Such is the general courſe of the diſeaſe; it will be neceſſary to conſider its ſymptoms more particularly.

The cough at the commencement, I have juſt had occaſion to obſerve, is generally dry, or nearly ſo, unleſs blood be expectorated, and ſometimes it continues ſo during the whole courſe of the diſeaſe. In moſt caſes, however, it becomes moiſt, and the matter expectorated is various. In the beginning it is generally mucus, and as the diſeaſe advances gradually aſſumes a purulent appearance, and then there is generally ſome, often a very ſlight, admixture of blood, although hæmoptyſis had not occurred at an early period.

Much has been ſaid of the means of diſtinguiſhing an expectoration of pus from that of mucus, which cannot with certainty be done by the eye. For this part of the ſubject I may refer to what was ſaid in the introduction to this volume, where it is conſidered at length.

When the cough is violent, particularly in the advaaced

ſtage of the diſeaſe and after meals, it is often accompanied with reaching and vomiting, which has been regarded by Morton and others as a diagnoſtic of the phthiſical cough. This, however, is far from being conſtant, and vomiting frequently accompanies violent coughing from whatever cauſe. Expoſure to cold, drinking cold fluids, the horizontal poſture, and every thing which tends to hurry the breathing, are apt to excite the cough. It is generally worſt in the evening, during the night, and on awaking from a ſleep of ſome continuance. Sometimes it is ſhort and hard, at other times full and ſoft, and often comes on by fits, which either ceaſe ſpontaneouſly, or are relieved by a more or leſs free expectoration.

Some have thought that they can diſtinguiſh a conſumptive from a catarrhal cough by the ſound, and in the advanced ſtages it frequently has a particularly hoarſe ſound, which is very remarkable, though not altogether peculiar to phthiſis. At early periods the ſound of the cough but little aſſiſts the diagnoſis. The ſhort hollow cough, ſuppoſed characteriſtic of phthiſis, is not always very diſtinctly marked, and often attends other diſeaſes. A cough can only with certainty be pronounced phthiſical, by attending to the ſymptoms which accompany it, particularly to the ſtate of the febrile ſymptoms and the nature of the matter expectorated.

There has been ſome difference of opinion concerning the inference to be drawn from purulent expectoration. It has till lately been generally ſuppoſed that it always indicates ulceration of the lungs. "In every inſtance of an expectoration of pus," Dr. Cullen obſerves, "I preſume there is an ulceration of the lungs. The late Mr. De Haen is the only author that I know of who has advanced another opinion, and has ſuppoſed that pus may be formed in the blood-veſſels, and be from thence poured into the bronchiæ." The reader will readily perceive the fallacy of this explana-

tion, but the fact that pus is ſometimes expectorated without ulceration of the lungs, has been confirmed by other writers, whom Dr. Cullen overlooked. In the 28th ſection of the 22d Ep. of Morgagni de Sedibus et Cauſis Morborum, there is a caſe related, which ſeems to be of the ſame kind with that mentioned by De Haen. To this Burſerius refers, and alſo to Bennet's Tabidorum Theatrum, Lieutaud's Hiſtoria Anatomica Medica, and the firſt volume of the Collectio Obs. Med. Pract. by Fred. Caſimirus, for ſimilar caſes. The reader may alſo conſult a Treatiſe, in Schroeder's works, on the Production of Pus without Ulceration.

It is true, indeed, that a charge brought againſt De Haen, that he did not with ſufficient accuracy determine the matter to be purulent, may be urged againſt the inferences of all theſe writers. When we compare them, however, with later obſervations, there can be little doubt of their accuracy. Dr. Hunter relates a caſe of empyema, where there was no ulceration. Pus is often diſcharged in gonorrhœa without ulceration. I have ſeen it diſcharged from the noſe, where there was no reaſon to ſuſpect any; even in common catarrh the expectoration often becomes purulent. The matter is placed beyond a doubt, and the great facility with which inflamed ſecreting ſurfaces form pus, is aſcertained by the experiments of Mr. Home above related.*

It would be of conſiderable importance to be able with certainty to diſtinguiſh the caſes in which purulent expectoration takes place without ulceration. The diagnoſis offered by the late Dr. White, publiſhed in 1792 by Dr. Hunter, of York, will not, I fear, be found ſufficient for this purpoſe. He terms the pus produced by inflammation without ulceration, inflammatory exudation. This, he obſerves,

* See the 36th and following page of this volume.

does not ferment or become putrid per ſe. A quantity of it, kept by way of experiment, after ſome time became dry and tough, ſmelling ſour and faintiſh. This ſpecies of matter, he obſerves in another place, in its natural ſtate, appears to be a homogeneous, ſmooth, yellowiſh fluid, reſembling good cream, without ſmell, and rather ſweetiſh to the taſte, it ſwims in water, and when burnt ſmells like burnt cheeſe. The matter of ulceration, he thinks, is a compound, conſiſting of inflammatory exudation and a portion of putrid blood and ſolids, varying in its appearance according to the predominance of the one or other of its component parts. The greater the proportion of the latter, the more fetid, brown, and ſanious it is. The contrary condition makes it more like laudable pus, yellower or whiter, more unctuous and homogeneous, and leſs putrid. This kind of ſputa, like the other, according to Dr. White, ſwims in water, but has an offenſive ſmell, except when the proportion of putrid matter is very ſmall, even then if it be burnt its putreſcency becomes manifeſt.

Dr. Stark* alſo propoſes an experiment for determining whether or not the matter expectorated in phthiſis comes from an ulcer. As the ſpitting, he obſerves, is perhaps the moſt certain criterion of vomica, it will be proper to enquire into its peculiar character, that it may be diſtinguiſhed from pus and mucus, two ſubſtances which it greatly reſembles. All of them, when free from air bubbles, ſink in water.† Pus is eaſily diffuſible in it, by gentle agitation, but in a few hours falls to the bottom. Mucus cannot be diffuſed in water without ſtrong agitation, but when diffuſ-

* Obſervations on Pulmonary Conſumption.

† When the thinner parts of mucus have been abſorbed, it readily ſinks in water.

ed, forms with it a permanent ropy fluid. The ſpitting of conſumptive patients is more eaſily diffuſible in water than mucus, and, like that, forms with it a ropy fluid, which although it depoſites a ſediment like pus, ſtill continues ropy, reſembling mucus and water. This experiment only tends to prove that the matter expectorated in phthiſis contains both pus and mucus, which may be the caſe whether it comes from an ulcer or not.

Baglivi ſays, that an excretion of ſmall granules by coughing, which, ſqueezed between the fingers, have much fetor, certainly indicates a latent vomica. Dr. Stark alſo obſerves, that when the matter expectorated is yellowiſh and in ſmall round maſſes, it probably comes from ſmall vomicæ. Dr. White, however, remarks, that he has ſeen an expectoration of this kind without any bad conſequences, an obſervation I have myſelf ſeen confirmed, ſo that it is probable a purulent or ſome other ſecretion may aſſume this appearance without the preſence of vomicæ.

In the purulent ſtage of phthiſis the expectorated matter is frequently more or leſs mixed with the blood or ſanies diſcharged from ill-conditioned ſores, which removes all doubt reſpecting its ſource.

In different caſes the colour and conſiſtence of the matter expectorated is very different. It is often aſh-coloured, yellow, or greeniſh, and very frequently of all theſe colours. It is generally more or leſs viſcid, and charged with air bubbles, and the blood mixed with it is of different ſhades. Calcarious matter is ſometimes expectorated in phthiſis. Sometimes a white, tough, ramifiedmatter, which has the appearance of ſmall branches of the bronchiæ, is coughed up. It conſiſts of inflammatory exudation, which becomes dry and tough, aſſuming the form of the cavities in which it is depoſited, and appears to be of the ſame nature with the mem-

brane formed in croup. The ſame matter is ſometimes obſerved in the ſtools of phthiſical patient, from their ſwallowing the ſputa.

The quantity of the matter expectorated is various. In moſt caſes it gradually increaſes as the diſeaſe advances; and after it aſſumes the purulent appearance, often amounts to ten or twelve ounces, a pound or even more, in twenty-four hours. It is common for it to decreaſe towards the fatal termination, eſpecially when the ſweats become very profuſe, and more frequently after the colliquative diarrhœa comes on. When this happens, it has been obſerved, that very little matter is found in the vomicæ after death.

It is chiefly after the expectoration of pus commences, that phthiſis has been regarded as contagious. I ſhall preſently have occaſion to make ſome obſervations on this opinion, and likewiſe on the queſtion, whether hectic ariſes from the abſorption of pus.

The breathing, particularly in the more advanced ſtages, during the exacerbations, is quick, and laborious. It is not uncommon for it to be attended with a rattling or wheezing, ſometimes very remarkable, at other times only to be perceived when the ear is placed near the thorax of the patient. In the advanced ſtages the breath is often offenſive.

The dyſpnœa is generally attended with a ſenſe of weight or tightneſs in the cheſt; and walking, and every other exertion which accelerates the circulation, increaſe it. Sometimes the breathing is eaſier when the patient lies on one ſide than on the other, and ſometimes it is eaſieſt when he lies on the back.

Sometimes there is no pain at any period of the diſeaſe. In many caſes, there is ſooner or later a fixed pain in ſome part of the thorax, ſeldom acute, and [illegible]times only to be felt when the patient makes a deep [illegible] or coughs. The

cough and pain are ſometimes troubleſome for a conſiderable time before the fever appears.

It is of much conſequence to attend to the ſtate of the pulſe at the commencement of phthiſis, for when it is uniformly more frequent, and particularly when it is harder than natural, without the characteriſtic ſymptoms of hectic, there is reaſon to believe that the languid inflammation which precedes the purulent ſtage of phthiſis, is going on, but that matter is not yet formed. In this ſtate the tongue and ſkin are dry, and the appetite not ſo good as it uſually is in hectic.

Whatever be the form of the fever at an early period, it almoſt always aſſumes that of hectic. This generally happens about the time that the matter expectorated begins to aſſume a purulent appearance, ſometimes before this period, ſeldom long after it.* The face then becomes pale, and the redneſs of the cheecks more circumſcribed. In ſome the lips are remarkably pale; in others, both theſe and the internal canthus of the eye, very florid, while the adnata appears of a dead white colour.

The fever has generally been obſerved to run higheſt in the moſt robuſt, and conſequently higher in men than in women; but it never riſes to an alarming height, hardly ever being attended with delirium, and rarely with headach.

The ſkin in the progreſs of the paroxyſm is hot and dry, ſometimes hard and painful to the touch, the patient generally complaining of much heat in the hands and feet.

* There are cases of well-marked phthisis on record, in which the fever never assumed the form of hectic. I have known many die of this disease, in which the leading characteristics of hectic, the evening chills and morning sweats, were never such as particularly attracted the patient's notice.

The pulſe, which during the remiſſion is ſeldom under 90, is generally, during the exacerbation, (particularly in thoſe of an irritable habit,) near 120, and often above 130. I is generally ſmall, and at an early period, more or leſs hard.

The thirſt is not conſiderable, the tongue moiſt, and, particularly in the advanced ſtages of the diſeaſe, remarkably clean and in ſome degree inflamed. In ſome caſes it grows dry and painful, and towards the termination is often covered with aphthæ.

The appetite is generally good, and almoſt always better than we ſhould expect from the degree of fever. In ſome caſes towards the fatal termination it becomes voracious. The bowels at the commencement, and during the progreſs of the diſeaſe, are for the moſt part coſtive.

The menſes often ceaſe at an early period, more frequently when the ſweats become profuſe, and ſometimes not till the diarrhœa comes on.

The eyes ſink, the nails ſhrivel and become incurvated. There is now much anxiety, particularly during the exacerbations, and the breathing is more ſhort, hurried, and laborious. As the debility increaſes, the ſweats become more profuſe; and there is hardly any diſeaſe in which emaciation goes to ſo great a length. The joints ſeem ſwelled, and almoſt every furrow in the bones becomes evident.

It is after the diſeaſe has arrived at this ſtage that the ſweating ſeems to check every other ſecretion. The mouth becomes dry, the bowels more coſtive, the hair falls off. The urine, which from the beginning of the hectic fever is ſcanty and high coloured, now becomes more ſo, ſtill continuing to depoſite a copious furfuraceous ſediment. Even the expectoration, as I have already had occaſion to obſerve, whether of pus or not, is generally diminiſhed. It ſome-

times happens, indeed, towards the fatal termination, that it is increased by a considerable admixture of blood, the increasing ulceration destroying many of the smaller vessels, or by the frequent bursting of small vomicæ.

The sediment from the urine in phthisis has been improperly termed lateritious, from its generally appearing reddish, but it seldom falls to the bottom of the vessel, or assumes the appearance of red sand. It does not arise from the absorption of pus, as has been supposed, but merely from the increase of perspiration. It is of the same nature with that which may at any time be produced by exciting the action of the skin. *

The last stage commences with the diarrhœa, which has been termed colliquative. When it comes on, the sweats generally become less profuse, sometimes cease altogether, and the two affections now and then alternate for some time before death. It is very remarkable, that not only the purulent expectoration sometimes ceases at this period, but even the fever itself, the pulse falling to 70 or 80, but these changes do not improve the prognosis. The diarrhœa is sometimes purulent. Does the occasional absence of fever at this period ever arise from the pus being discharged in this way?

After the appearance of the diarrhœa, which no means are capable of stopping for any considerable length of time, all the symptoms grow rapidly worse. The breath becomes extremely fetid, the matter expectorated is often so much so, that even the patient himself can hardly bear it. A sense of anxiety and often nausea harass him; the pulse is small and

* See the observations on the crises of fevers, vol. 1. p. 188, & seq.

extremely frequent; the voice becomes hoarſe, or fails altogether; the hands, legs, and feet ſwell; the emaciation, which has been increaſing during the whole courſe of the diſeaſe, is now extreme; the eyes are dim and ſunk; the temples fallen in; and the noſe is ſharpened. We rarely obſerve theſe ſymptoms in the ſame degree in other diſeaſes. Hence, the popular name, conſumption.

The urine is now often pale, muddy, and ſometimes in conſiderable quantity.

Sometimes the patient complains of head-ach, now and then followed by ſome degree of delirium. In other caſes, vertigo and fits of ſyncope come on.

In the mean time, the diſcharge from the bowels becomes more fetid and profuſe. The pulſe flutters, the extremities become cold, and the patient, at length exhauſted, imperceptibly expires, for death in this diſeaſe is almoſt always tranquil.

It is not uncommon for the cough to ceaſe as the fatal termination draws on, while the anxiety and dyſpnœa increaſe.

Strange as it may appear, amidſt the horrors of this ſituation, the patient's hopes ſeldom abandon him, and ſometimes ſeem even to increaſe as death approaches. "Nor is this "illuſion," ſays Deſault, "confined to thoſe who are ig-"norant of medicine. I have even ſeen phyſicians juſt "expiring with this diſeaſe, who would not admit that they "were phthiſical. Tant il eſt vrai que l'amour de la vie "nous ſeduit et nous perſuade aiſément, ce que nous deſi-"rons avec ardeur." But in the nature of the diſeaſe itſelf, which increaſes by ſo imperceptible degrees, and to the laſt leaves the mental faculties ſo little impaired, we are in part at leaſt to look for the cauſe of this deception.

The laſt ſtage of phthiſis is ſometimes prevented by the burſting of a large vomica, or by hemorrhagy from the lungs, occaſioning ſuffocation.

Such is the uſual courſe of phthiſis, certain deviations from it are frequently obſerved. Sometimes there is no purulent expectoration at any period; in ſome caſes there is no colliquative diarrhœa, more rarely there is little or no tendency to ſweat.

In ſome rare inſtances the courſe of the diſeaſe deviates from that which has been deſcribed in much more eſſential reſpects. There is not only no ſweating, nor purulent expectoration, but neither fever, nor emaciation; ſo that it is only from the appearances on diſſection that the diſeaſe deſerves the name of phthiſis. In one caſe of this kind, in which I examined the lungs after death, they were found almoſt wholly converted into a cluſter of tubercles, and life was extinguiſhed by no other cauſe but the lungs being rendered unfit to perform their functions. The ſtrength was by no means exhauſted, and the ſurgeon who opened the body ſaid he had ſeldom ſeen ſo much fat about the heart. There was pus in ſome of the tubercles, but it is probable that abſorption had been prevented by the calloſity of their ſides. The diſeaſe, which was protracted for many months, had very much the appearance of one continued fit of aſthma, not very ſevere during the greater part of its courſe, but gradually becoming more ſo, till the breathing was wholly interrupted.

The duration of phthiſis is various; it ſometimes terminates in a few weeks; ſometimes it laſts for years, the ſymptoms becoming worſe in ſpring and autumn. It is not uncommon for it to laſt for two or three years, and it is ſaid to have laſted for twenty or thirty.* It is probable that in

* See the observations of Lieutaud and others on this disease.

ſuch caſes there have been conſiderable intermiſſions, ſo that they are rather to be regarded as inſtances of repeated attacks, than of the continuance, of the diſeaſe. It is thought by ſome, that its duration is moſt apt to be protracted in thoſe advanced in life. The uſual duration of phthiſis is from two months to two years.

When the local ſymptoms of phthiſis are leſs diſtinctly marked than uſual, and particularly when there is no purulent expectoration, it is ſometimes confounded with quotidian remittents, eſpecially as theſe are frequently attended with ſome affection of the cheſt. If, however, we attend to the hiſtory and cauſes of theſe diſeaſes, we ſhall ſeldom be at a loſs to diſtinguiſh them. It will often appear that the remittent has formerly been an intermittent, or that it has been gradually aſſuming more of the continued form. The fevers prevalent in the neighbourhood, or the preſence of marſh miaſma, will often point out its nature. Beſides, in remitting fever, the ſweats are more general and leſs profuſe, and the duration of the paroxyſm longer, than in hectic. The great emaciation and the peculiar habit which diſpoſes to phthiſis, aſſiſt the diagnoſis in doubtful caſes, which are very rare.

When phthiſis runs its courſe very rapidly, it greatly reſembles pneumonia, and, indeed, imperceptibly runs into this diſeaſe; ſo that the only differences are, that the inflammatory ſymptoms in phthiſis are for the moſt part leſs ſevere, the purulent ſtage better marked, and the emaciation more rapid; circumſtances which depend on the languid nature of the inflammation in phthiſis, and the peculiar habit of thoſe who are ſubject to it.

Purulent collections about the fauces, when the matter is gradually diſcharged, ſo as to be thrown out by coughing,

have ſometimes been miſtaken for phthiſis, and have even deceived the moſt experienced; caſes of which the reader will find related by Raulin and others. The patient ſhould therefore be queſtioned whether he feels any of the uneaſineſs about the face or throat, which generally attends abſceſſes of theſe parts, and forms the beſt diagnoſis; and if this proves to be the caſe, the internal fauces ſhould be carefully examined. The breathing of courſe is then either not affected, or affected in conſequence of ſome tumor or other diſeaſe about the larynx. Upon the whole, it may be affirmed, that in ninety-nine caſes of a hundred, where the expectoration is purulent, and the fever aſſumes the form of hectic, the patient labours under phthiſis.

SECT. II.

Of the Morbid Appearances on Diſſection.

In ſome caſes the lungs exhibit nearly the ſame appearances as in pneumonia. For, as I had occaſion to obſerve in treating of that diſeaſe, the formation of any abſceſs in the lungs, which neither occaſions ſuffocation, nor has its ſides ſo callous as to prevent abſorption, ſoon produces hectic fever, and the other ſymptoms of phthiſis, with or without purulent expectoration, according as the abſceſs has or has not formed a communication with the bronchiæ; unleſs, as ſometimes happens in very favourable habits, the matter is expectorated and the wound almoſt immediately heals.

It appears, we have ſeen, from a variety of obſervations, that there have been caſes of phthiſis without either abſceſs or ulcer. In ſuch caſes, the only morbid appearances in the lungs are traces of inflammation, and a quantity of pus in the bronchiæ and air cells.

But the moſt conſtant of all the morbid appearances in the lungs of thoſe who die of phthiſis, are tubercles. Theſe are hard tumors, from the ſmalleſt ſenſible ſize to about half an inch or an inch in diameter, ſituated, Dr. Stark * obſerves, in the cellular ſubſtance of the lungs. They are of a light colour, and if they have not ſuppurated, generally ſolid throughout. In the ſame ſubject they are found of various ſizes, and frequently appear in cluſters. No veſicles, cells, or veſſels are to be ſeen in the ſolid tubercles, even on examination with a microſcope, and after the pulmonary artery and vein have been injected. They adhere to the ſubſtance of the lungs, Dr. Baillie obſerves, without any peculiar covering or capſule.

On the cut ſurface of ſome are obſerved ſmall holes, as if made by the pricking of a pin, and at the bottom of the cavities containing pus, ſeveral ſmall holes are frequently to be ſeen, from which, on preſſure, purulent matter iſſues; but in neither caſe do they ſeem to communicate with any veſſels.

The purulent cavities of tubercles are of different ſizes, from the moſt minute to half an inch or three quarters of an inch in diameter, and when cut through and emptied, have, if the ſuppuration has been completed, the appearance of ſmall white cups, nothing remaining of the ſubſtance of the tubercle, except a thin covering or capſule. The cavities of leſs than half an inch diameter are generally

* Observations on pulmonary consumption by Dr. Stark, to whose abours we are indebted for most of the following observations on the appearance and structure of tubercles.

ſhut, thoſe which are larger open into the bronchiæ by one or more holes. The largeſt cavities, which are generally of an oval ſhape, are lined partially or wholly with a ſmooth, thin, tender ſlough or membrane. The matter found in theſe cavities or vomicæ, as they are called, is ſimilar to that expectorated, and has ſeldom any admixture of blood, except where there are ulcerations. They often communicate with each other by ragged openings.

The larger vomicæ, which have numerous bronchial openings, are found to contain ſcarcely more matter than is ſufficient to beſmear their ſurface. The largeſt are generally ſituated towards the back part of the lungs. Several ſmall apertures on the ſurface of the lungs often lead to the vomicæ; and ſometimes, though not often, a vomica is a hemiſpherical cavity in the external part of the lungs.

Wherever there is a vomica, there is a broad and firm adheſion of the pleura, ſo as to preclude all communication between the cavity of the vomica and that of the cheſt; even tubercles, indeed, are ſeldom found without adheſions.

Thoſe parts of the lungs which are contiguous to tubercles, are red, ſometimes ſoft, but more frequently firm and hard.* And while the ſound parts of the lungs are artificially diſtended, the parts in the neighbourhood of the tubercles and vomicæ remain depreſſed and impervious, whether the air be blown through the trachea, or into inciſions made in the ſurface of the lungs. So that the function of the lungs in thoſe parts is wholly loſt.

The pulmonary arteries and veins, as they approach the larger vomicæ, are ſuddenly contracted; when outwardly, the veſſel appears nearly of the proper ſize, the cavity is often found to be much leſſened, being almoſt filled up by a fibrous

* Dr. Baillie's Morbid Anatomy

ſubſtance, and the veſſels paſſing along the tubercles are often found detached from the neighbouring parts for about an inch of their courſe. When the lungs are injected, the injection ſeldom enters the middle-ſized vomicæ, and ſtill more rarely the larger or ſmaller ones.

The bronchiæ themſelves are never found contracted. But the internal ſurface of thoſe which open into the larger vomicæ is often of a deep red colour, its veſſels appearing enlarged, and the internal ſurface of the trachea is ſometimes partially red.

" In cutting into the lungs," Dr. Baillie obſerves, " a " conſiderable portion of their ſtructure ſometimes appears " to be changed into a whitiſh ſoft matter, ſomewhat in- " termediate between a ſolid and a fluid, like a ſcrofulous " gland juſt beginning to ſuppurate. This appearance I be- " lieve is produced by ſcrofulous matter being depoſited " in the cellular ſubſtance of a certain portion of the lungs, " and advancing towards ſuppuration. It ſeems to be the " ſame matter with that of the tubercle, but only diffuſed " uniformly over a conſiderable portion of the lungs, while " the tubercle is circumſcribed.

" I have ſeen another ſort of tubercle in the lungs, " which I believe to be very rare. It conſiſts of a ſoft " tumor, formed of a light brown, ſmooth ſubſtance. This " is not contained in any proper capſule, but adheres im- " mediately to the common ſtructure of the lungs. In " cutting through ſeveral of theſe tumors I did not find " any of them in a ſtate of ſuppuration. They were com- " monly as large as a gooſeberry, and were chiefly placed " upon the ſurface of the lungs; ſome, however, were " ſcattered through their ſubſtance, of a ſmaller ſize. Theſe " are very different in their appearance from the common

" tubercle laſt deſcribed, and are the effect of a diſeaſed " proceſs, which probably is very imperfectly known.

The lymphatic glands of the cheſt are of a dark colour, and ſometimes contain a matter like moistened cheeſe.* When calcarious matter has been expectorated, it is generally found in the lungs in conſiderable quantity. The pleura coſtalis and the pleura of the lungs ſometimes adhere almoſt throughout their whole extent. Ulcers are often found in the branches of the bronchiæ, and ſometimes in the trachea itſelf.† In ſome caſes of phthiſis, where ulcers have been found in the trachea, there has been reaſon to ſuppoſe that they firſt attacked this part and afterwards ſpread to the lungs.

It is not uncommon to ſee a whole lobe, or even a larger portion of the lungs, almoſt conſumed by ſuppuration. We even read of caſes where half or more of the lungs was conſumed, ſo that it was ſurpriſing that life could go on ſo long.

From a rude calculation, made on the lungs of many who died of phthiſis, the part which remains fit for the admiſſion of air may, at a medium, be eſtimated at one-fourth of the whole. The higher and poſterior parts are moſt frequently affected and to the greateſt degree, and the lungs on the left ſide, it is ſaid, more frequently than thoſe on the right.

The abdominal viſcera are often much affected. Dr. Stark ſays, that there is ſeldom any morbid appearance in them, except ſlight eroſions of the villous coat of the inteſtines. But other writers mention induration, enlargement, ulceration, and abſceſs of the liver, ſpleen, and other abdominal viſcera.

With regard to the ratio ſymptomatum of phthiſis, it may

* Dr. Stark's Treatise.

† For an account of the phthisis trachealis, see the Institut. Med. Prac. of Burserius.

be obſerved of this, as of moſt other diſeaſes, that the ſymptoms are either ſuch as we can at once account for, or involved in ſuch obſcurity, that it is in vain to attempt any explanation of them. It is unneceſſary to inform the reader, that the irritation, occaſioned by the matter in the bronchiæ, cauſes coughing, or that the inflammation, abſceſs, and ulceration are the cauſes of the pain. It is impoſſible to be acquainted with the appearances on diſſection, without making theſe inferences. But who can explain why the cheeks become florid, in proportion as the adnata becomes pale; or why the diſcharge by the ſkin is at a certain period exchanged for that by the bowels? I ſhould, therefore, have paſſed over in ſilence the ratio ſymptomatum of this, as of moſt of the foregoing diſeaſes, were it not that the diſputes reſpecting the cauſe of hectic fever has rendered it intereſting.

Some have maintained that hectic fever always, others, that it never ariſes, from the abſorption of pus. Both ſides of this queſtion have been ſupported by arguments of two kinds; the one, inferences from matters of fact; the other, certain reaſonings derived from the ſenſible and other qualities of pus. I ſhall, confine myſelf to a ſhort review of the former, leaving them for the reader's conſideration. None of the latter appear at all ſatisfactory, nor does the ſtate of our knowledge ſeem to admit of reaſonings of this kind.

The principal arguments tending to prove that hectic fever does not ariſe from the abſorption of pus are, that abſceſſes, even of conſiderable ſize, have exiſted for years without occaſioning hectic fever, for the moſt part indeed producing fever, but fever of a very different nature; after the amputation of a conſiderable limb, a very large ſurface is conſtantly covered with pus, and even expoſed to the air, a circumſtance acknowledged to favour the production of hec-

tic fever, yet this fever rarely appears; towards the end of dropſy, where there is no abſceſs, hectic fever often ſhews itſelf; when any acrid matter is abſorbed, we generally find tumors in the lymphatic glands through which it paſſes; when a purulent ulcer is attended with hectic fever, this is ſeldom obſerved; it has been maintained that hectic fever is often completely formed in conſequence of inflamed tubercles in the lungs before ſuppuration has taken place.* Were we aſſured that this obſervation is well founded, it would be ſufficient to determine the queſtion; but this ſeems far from being the caſe. There are many inſtances of incipient phthiſis in which debility, emaciation, and fever, which, may be miſtaken for hectic, eſpecially as it is frequently attended with ſome degree of morning ſweats, occur, without ſuppuration having taken place in the lungs; but it does not appear that exquiſitely formed hectic ever ſupervenes in phthiſis till pus has been formed.

Thoſe who maintain that hectic fever always ariſes from the abſoption of pus, admit that abſceſſes have ſometimes been known to continue for a long time without producing hectic fever; but in theſe caſes, they maintain there is little or no abſorption of pus, the ſides of the abſceſs having become callous and the abſceſs itſelf continuing without either increaſe or diminution, and giving little or no uneaſineſs.

Towards the fatal termination of dropſy, it is granted that hectic fever often makes its appearance. But on inſpecting the dropſical cavities after death, the fluid is frequently found more or leſs mixed with pus, which is often the caſe alſo with what is drawn off by tapping, for ſome

* Dr. Reid's Essay on the Nature and Cure of Phthisis Pulmonalis.

time before death. Besides towards the fatal termination of ascites, there is sometimes an expectoration of purulent matter.

With regard to pus not occasioning tumors in the lymphatic glands, in its passage to the blood, it may be said, that pus is not of a nature apt to irritate or inflame these glands; in the same manner as the matter of syphilis and cancer, which inflame the glands, is not fitted to excite fever.

That hectic fever does not so frequently succeed large wounds, as it ought to do, were it occasioned by the absorption of pus, seems to be the argument of most weight, and to which it is not easy to find a satisfactory answer. It may be observed, that when wounds continue to form a great deal of pus for a considerable length of time, they often do produce hectic fever. The removal of the dressings, and frequent cleaning of the wound, must tend to prevent the absorption of pus. While granulations are going on, the matter secreted is less copious and more bland and thick than when the wound is ill-conditioned, which is generally the case in ulceration of the lungs.

SECT. III.

Of the Causes of Phthisis Pulmonalis.

PHTHISIS pulmonalis is mentioned in the medical writings of every period since the days of Hippocrates. It is a disease of temperate climates, and in no country so frequent

as in Great Britain. In London it is ſaid that 5000 die of it annually. Allowance, however, muſt be made for other diſeaſes paſſing under the name of conſumption. Sydenham alledges, that two-thirds of thoſe who die of chronic diſeaſes in this iſland, fall a ſacrifice to it.

Thoſe who are of a ſlender make, with a long neck, delicate ſmooth ſkin, and a fair ruddy complexion, with white and tranſparent teeth, and the albugenea of the eye of a bluiſh hue, who have a flat or narrow cheſt, with high ſhoulders, and ſtoop when they walk, who poſſeſs an habitual and great flow of ſpirits, with an early acuteneſs of underſtanding, are moſt liable to phthiſis.

As the peculiar make and habit of body are hereditary, ſome account in this way for phthiſis being ſo, and we have every reaſon to believe that theſe alone are ſufficient to diſpoſe to the diſeaſe, but we often ſee the children of phthiſical parents, who inherit very little of this habit, fall a ſacrifice to it.

Women, upon the whole, are more liable to phthiſis than men, and thoſe between the age of puberty and thirty-five than others. It appears, however, much later than thirty-five, and ſometimes, though more rarely, long before puberty. Children have been born labouring under phthiſis, and died of it ſoon after birth.

The exciting cauſes of this diſeaſe are very numerous. They may be divided into three claſſes. The firſt comprehending thoſe cauſes which exiſt in the lungs themſelves and the parietes of the thorax; the ſecond, external cauſes acting on the lungs; and the laſt, cauſes acting on the ſyſtem in general.

The cauſes exiſting in the lungs themſelves, and the parietes of the thorax, are tubercles, ſuppuration of the lungs in conſequence of common pneumonia forming either an

open ulcer or a vomica, the preſence of calcarious concretion in the lungs, hæmoptyſis, catarrh, aſthma, metaſtaſis of pus from other parts to the lungs, extenſive adheſions of the pleura, tumors and other affections of the abdominal viſcera preſſing on the diaphragm, fracture or exoſtoſis of the ribs, and mal-conformation of the thorax.

The external cauſes acting on the lungs are, bad air, duſt taken in with the breath, other irritating matter introduced by the trachea from aphthæ or other affections of the mouth, contuſions and wounds of the thorax.

The cauſes of phthiſis affecting the ſyſtem in general are, an inactive ſedentary life, indulging much in the uſe of intoxicating liquors or in venery, the lues venerea, ſuppreſſed hemorrhagies, certain eruptive fevers, any repelled eruption, in ſhort, whatever greatly debilitates or tends to occaſion a plethoric ſtate of the ſyſtem; and many add contagion.

In the following obſervations on theſe cauſes, I ſhall not follow the order in which they have been mentioned. As moſt of the cauſes of phthiſis act by producing tubercles, by treating of them in the firſt place, we ſhall be better prepared to underſtand the modus operandi of its other cauſes.

It ſeems now very generally admitted, that a ſcrofulous habit is in moſt caſes the prediſpoſing cauſe of tubercles. They reſemble ſcrofulous ſwellings in other parts of the body; like theſe their progreſs to ſuppuration is generally ſlow, and the ulcer formed by them difficult to heal. Thoſe born of ſcrofulous parents are moſt ſubject to them. They are often accompanied with ſcrofulous affections in other parts of the body, meſenteric obſtruction, glandular ſwellings in the neck, &c. It alſo often happens in the ſame family, that ſome are affected with external marks of ſcrofula, others with phthiſis. I have ſeen confirmed phthiſis relieved

by the appearance of ſcrofulous ſwellings and ſores about the neck. Thoſe who have been much troubled with ſcrofulous ſwellings and ſores at an earlier period of life, are often attacked with phthiſis about the age of puberty or ſoon after it. Where no ſcrofulous taint can be obſerved either in the patient or his relatives, his habit is generally of that kind which accompanies ſcrofula, and gives reaſon to believe that the conſtitution is not free from a tendency to it.

Dr. Cullen and ſome other writers have enumerated cauſes as capable of producing tubercles, independently of any ſcrofulous tendency. On a fair review of the ſubject, however, the exiſtence of ſuch cauſes appears very doubtful. It is evident that the idea of exanthematic acrimony being lodged in the lungs, and there producing tubercles,* is merely hypothetical. It is by no means a fair inference, that becauſe phthiſis follows a diſeaſe produced by a certain morbific matter, that the former, as well as the latter, ariſes from the preſence of this matter. Sometimes in ſmall-pox, and more frequently in meaſles, there is an evident tendency to pneumonia; and it is where this tendency is moſt conſiderable, and in thoſe of a ſcrofulous habit, that phthiſis is moſt apt to ſupervene on theſe fevers, and in ſuch habits tubercles may be excited by whatever tends to irritate and inflame the lungs, as will evidently appear from a conſideration of their other cauſes.

Similar obſervations are applicable to the other caſes of ſuppoſed acrimony producing tubercles. In ſome of theſe the debility occaſioned by tedious diſorders ſeems to be the exciting cauſe. It is well known that, in the prediſpoſed, whatever debilitates may occaſion ſcrofulous affections. Upon the whole we ſhall not err much, perhaps, by regarding

* Dr. Cullen's First Lines.

a ſcrofulous habit as neceſſary to give the prediſpoſition to tubercles. We can have no doubt, however, that this prediſpoſition may remain through life without producing them, if not called into action by ſome of the cauſes above enumerated.

It is not eaſy to aſcertain the preſence of tubercles while they remain in an indolent ſtate. In an inflamed ſtate, they occaſion the ſymptoms which have been mentioned as forming the firſt ſtage of phthiſis.

The following are thoſe which give reaſon to ſuſpect the preſence of indolent tubercles. A ſlight ſhort cough, not eaſily alleviated by mucilaginous medicines, increaſed on lying down, either without expectoration, or with a ſcanty expectoration of a viſcid matter, or, as Burſerius deſcribes it, of a matter like water in which ſoap has been diſſolved; ſome pain in the cheſt, more or leſs acute; ſometimes fixed, more frequently wandering and irregular, with a degree of dyſpnœa, uniformly increaſed on uſing exerciſe, or by any other cauſe which accelerates the circulation. If with theſe ſymptoms the patient becomes languid and indolent, and loſes his fleſh, and ſome degree of hardneſs in the pulſe, with occaſional heat of the ſkin, is perceived, eſpecially if he be of a phthiſical habit, there can be little doubt of the preſence of tubercles. They will ſometimes continue in an indolent ſtate for many months, or even for years, during which the patient is never long free from cough.

It will appear from the following obſervations on the other cauſes of phthiſis, which of theſe ſeem to act by producing tubercles, and which ſeem to occaſion this diſeaſe without their intervention.

It ſometimes happens, it was obſerved above, that ſuppuration takes place in pneumonia without immediately

proving fatal, nor is it always followed by phthiſis. Abſceſſes often remain for a long time, we have ſeen, without occaſioning hectic fever. There have even been inſtances in which the pus was abſorbed, and the patient reſtored to health. In general, however, if the burſting of the abſceſs does not occaſion ſuffocation, hectic fever comes on, and gradually exhauſts the ſtrength.

When the matter is poured into the cavity of the thorax, it ſoon produces all the ſymptoms of phthiſis, except the purulent expectoration, and ſometimes this ſymptom alſo, in conſequence of part of the lungs contiguous to the pleura being conſumed. When a ſmall abſceſs from pneumonia, as appears from what was said of this diſeaſe, burſts into the ſubſtance of the lungs, the quantity of matter diſcharged not being ſufficient to occaſion ſuffocation, a purulent expectoration is the conſequence; but the chance of recovery is much better than in the caſe of tubercles. If the conſtitution is healthy, the expectoration ſometimes gradually diminiſhes, and in a ſhort time diſappears. *

Hæmoptyſis is regarded as ſo frequent a cauſe of phthiſis, that Dr. Cullen, we have ſeen, ranks the latter as a ſequela of that diſeaſe. It is ſuppoſed by ſome, that it occaſions phthiſis in conſequence of ſome portion of the extravaſated blood which is not expectorated, ſtagnating and becoming putrid in the cells of the lungs. It is not impoſſible that hæmoptyſis may prodnce phthiſis in this way. In moſt caſes, however, as it is the conſequence of repeated hæmoptyſis, it ſeems probable that it ariſes from the veſſels which have been frequently ruptured not healing readily, particularly in lungs inclined to diſeaſe.

* Dr. Cullen's First Lines.

The commencement of phthiſis, from whatever cauſe, ſo frequently reſembles catarrh, and has ſo often been miſtaken for it, that there is reaſon to believe this diſeaſe leſs frequently the cauſe of phthiſis, than is generally ſuppoſed.

There appear to be four ways in which catarrh may induce phthiſis It may occaſion pneumonia or hæmoptyſis; or it may excite a languid inflammation of the internal membane of the bronchiæ, occaſioning a purulent ſecretion from its ſurface, which now and then degenerates into phthiſis. I have had occaſion to remark above, that pus is ſometimes expectorated in catarrh. It would ſeem that this purulent expectoration has ſometimes gradually increaſed, without ulceration, and at length becoming copious, and in ſome meaſure habitual, has given riſe to hectic fever. Dr. Cullen and others doubt of ſuch caſes having exiſted, but their doubts ſeem chiefly to ariſe from a belief that pus is rarely, if ever, formed without ulceration. Copious and habitual expectorations of phlegm, ſays Raulin, ſometimes become purulent and degenerate into phthiſis, particularly after irregularities of diet, or any thing elſe which impairs the healthy ſtate of the fluids.

But catarrh moſt frequently acts by exciting tubercles. This it may do merely by the violent and repeated agitation of the cheſt, when the cough is ſevere and long continued; or in the ſame way that we ſee ſcrofulous tumors occaſioned in external parts, by taking cold; and this we have reaſon to believe is the way in which catarrh generally acts, for its tendency to produce tubercles is by no means proportioned to the ſeverity of the cough. Contagious catarrh, although generally more ſevere than that from cold, does not appear to be more apt to produce tubercles. I think we have reaſon to believe that it is leſs ſo. We ſee the moſt violent coughs

continue for a great length of time without producing phthisis. How much more frequently is measles than hooping-cough the cause of this disease?

It has been a common opinion, that syphilis occasions phthisis by producing venereal ulcers in the lungs. There is no direct proof of this, and there are other ways of explaining the concurrence of these diseases.

Ulcers of the mouth of various kinds, indeed, sometimes spread to the trachea and lungs; and in this way venereal ulcers seem now and then to have occasioned phthisis. Inveterate aphthæ of the mouth, (Raulin observes) which proceed from some sorbutic, scrofulous, venereal, or other diseased state of the habit, spread to the pharynx and larynx, and produce ulcers in the œsophagus and trachea, which occasion the symptoms of a confirmed phthisis.

The general opinion is, that the syphilitic matter occasions tubercles; and Dr. Cullen, we have seen, seems even to suspect that it may have this effect where there is no predisposition. It is very doubtful, however, if this matter ever produces tubercles, even in the predisposed. Syphilis seldom occasions phthisis, except in scrofulous habits, and even in these, for the most part, not till after the constitution has been debilitated by repeated attacks. But in such habits, whatever debilitates may have the same effect. Immoderate indulgence in venery has often occasioned phthisis in those who have never laboured under any venereal disease; * and indeed such causes produce all the various forms of scrofula. From these circumstances it appears probable, that syphilis, if we except the spreading of the ulceration in the way just pointed out, only tends to produce phthisis as it tends to de-

* The reader will find excessive venery ranked among the causes of phthisis, by Raulin, Lieutaud, and others.

bilitate; and we have reason to believe that the very debilitating remedies employed, and often continued for so great a length of time, in syphilis, have no small share in this effect. It appears highly probable, that some other diseases, particularly the scurvy, (which have been supposed to occasion phthisis by the application of some peculiar acrimony to the lungs,) act in the same way.

Among the exciting causes of tubercles, a mal-conformation of the thorax is one of the most frequent; nor is it necessary that it should go to the length of deformity to have this effect. It seems equally pernicious whether it arises from the distance between the spine and sternum, or that between the sides of the chest being too small. Binding children with rollers, and the improper use of stays, may be ranked among the causes of mal-conformation. As any mal-conformation of the bones of the chest renders the breathing less free, and slight irritations applied to the lungs, where some irritation already exists, will be sufficient to excite coughing, it is not surprising that it should dispose to tubercles. It is a common observation, that those who are subject to coughs from any cause, are, cet. par., most liable to phthisis. An habitual tendency to coughs may proceed from various causes. It often arises, we have just seen, from tubercles themselves in an indolent state, and very often, we have reason to believe, merely from that peculiar state of the lungs which disposes to them.

An inactive sedentary life seems to dispose to tubercles in two ways; by debilitating the system in general, and by the habit of stooping, hurting the lungs in the same way with mal-conformation of the chest. It has been observed, that occupations which confine the body to a bent posture are particularly favourable to the production of this disease.

The free use of intoxicating liquors is a frequent cause of

tubercles. All causes of plethora have the same tendency. Suppressed hemorrhagies, the drying up of issues or old wounds, &c. It frequently happens, that where the symptoms of phthisis have been removed by an issue, they return on drying it up. Although suppressed hemorrhagies seem frequently to produce tubercles, they oftner, perhaps, induce phthisis, by occasioning hæmoptysis. Of all the causes of this kind, the suppression of the menstrual discharge most frequently occasions phthisis.

Bad air is mentioned by writers as a cause of phthisis; and it is probable that it operates by producing tubercles, or tending to inflame them. What was said of bad air in speaking of gout is applicable here. Moisture seems still to be the noxious principle. A moist air materially affects the breathing in asthmatic people. It seems likewise to dispose to phthisis by occasioning general relaxation and debility. The frequency of phthisis in Holland has been attributed to this cause. The good effects of sea voyages in this disease might be urged against the probability of a moist air occasioning phthisis. This objection, however, seems to be answered by what was said of the causes of a damp atmosphere in speaking of the treatment of gout; from which it appears, that the air at sea, from the greater uniformity of its temperature, can hardly ever be so much charged wit moisture as it frequently is on land.

Breathing a dusty air seems often to inflame tubercles, if it does not excite them. "I have not," Dr. Cullen observes, "met with many instances of phthisis which could be re-"ferred to exposure to dust; but from Ramazzini, Mor-"gagni, and some other writers, we must conclude such "cases to be more frequent in the southern parts of Eu-"rope." So powerful is this cause, that the needle-pointers of this neighbourhood seldom escape phthisis above a few

years, unleſs they uſe means to prevent the duſt from entering with the breath; and with every precaution, the danger is conſidered ſo great, that it is only by very high wages that any one is induced to work in this part of the trade; and thoſe who do, are excluded from the aſſociations, formed by the labouring tradesmen, for the relief of their widows and orphans.

Blows or wounds of the thorax may occſiaon phthiſis in ſeveral ways. In producing tubercles they ſeem to act in the ſame way with many of the foregoing cauſes of irritation of the lungs.

Among the cauſes of tubercles are ranked malignant fevers, to which all other highly debilitating cauſes may be added.

Obſtructions of the abdominal viſcera, particularly an enlarged and indurated ſtate of the liver, often prove fatal, by inducing phthiſis. In moſt of theſe caſes, the formation of pus ſeems at an early period to be unattended with ulceration, for I have ſeen ſome ſuppoſed to labour under confirmed phthiſis reſtored to health by removing the abdominal diſeaſe. If ſuch caſes are neglected in the beginning, tubercles and ulceration ſucceed. An indurated liver may occaſion phthiſis by preſſing on the lungs. But we have every reaſon to believe that affections of the abdominal viſcera, often produce it, by the ſame kind of ſympathy which gives riſe to certain ſpecies of ſymptomatic pneumonia.*

If contagion is ever the cauſe of phthiſis, it is probably by producing tubercles. It ſeems leſs likely that it ſhould give riſe to the other changes which precede phthiſis, pneumonia, hæmoptyſis, &c. It has not been regarded as contagious till after the purulent ſtage commences. The reader

* See the 258th and following pages of this volume.

will find in authors, particularly foreign authors, a variety of cafes in which it feems to have arifen from contagion. As in fome countries it is very frequent, and particularly as it is hereditary, it has probably been often afcribed to contagion when it arofe from other caufes. It may often be attributed to the fatigue and anxiety of mind occafioned by attendance on the fick in fo tedious and hopelefs a difeafe. It does not feem improbable, however, that inhaling the fetid breath of a perfon in confirmed phthifis may prove a fufficient caufe of irritation to excite tubercles in the predifpofed, or inflame them where they exift in an indolent ftate. Phthifis has been regarded as contagious from very early times. It is certain, however, that it is not of a very contagious nature. There is perhaps no other country in which it is fo common as in Britain; yet Dr. Cullen fays, that he never knew it evidently to arife from contagion. Upon the whole, there is reason, I think, to believe that contagion may co-operate with the hereditary difpofition to render phthifis fo fatal as it is in fome families. It is prudent, therefore, in thofe of a phthifical habit to avoid fpending much time, and particularly fleeping in the fame bed, with patient's labouring under this difeafe. It appears highly improbable, that the clothes of confumptive patients, as fome have maintained, are capable of communicating the difeafe.

Pus abforbed from other parts of the body, and depofited in the lungs, has been ranked among the caufes of phthifis.*

* Many doubt whether phthisis ever proceeds from this cause. Raulin relates a case in which the scrotum was wounded, and a considerable discharge of pus took place. The discharge gradually diminished, and the patient at the same time was seized with a frequent and troublesome cough, and began to expectorate pus, as Raulin calls it, "très caracterisé." But on bringing back the pu-

It was obſerved, that calculi are ſometimes expectorated by phthiſical patients. Their formation generally precedes the phthiſical ſymptoms, and ſeems to produce them. They may by their irritation occaſion tubercles; but they ſeem to excite phthiſis, where there is no diſpoſition to tubercles, merely by wounding the lungs. In caſes of this kind the phthiſical ſymptoms are ſometimes never completely formed, and then the termination is ſometimes favourable, if the cauſes of inflammation are carefully avoided.

It is a curious circumſtance in the hiſtory of phthiſis, that its progreſs is often interrupted by pregnancy or mania. The latter has been known to produce a radical cure, but almoſt always after delivery, and often after the removal of the mania, the diſeaſe recurs.

Phthiſis from tubercles is the moſt fatal. There is reaſon to believe, as Dr. Cullen obſerves, that there have been recoveries after the ſuppuration of a tubercle, but they are extremely rare.

SECT. IV.

Of the Treatment of Phthiſis Pulmonalis.

It has been common with thoſe who have written on the treatment of phthiſis, to lay down certain indications of cure, which we have no means of fulfilling; that of correcting

rulent discharge, the cough and expectoration ceased. The man died of the wound, and the lungs were found sound, and without the least mark of any suppuration having taken place in them.

the vitiated ſtate of the fluids, of curing the ulcer in the lungs, &c. Theſe tend only to miſlead. As far as I can judge, our preſent knowledge of phthiſis admits of no other indications but thoſe of obviating the inflammatory diatheſis, and ſupporting the ſtrength. After the means of fulfilling theſe are conſidered, it will be neceſſary to point out thoſe of alleviating certain ſymptoms, whoſe treatment does not fall under the general plan; and I ſhall in the laſt place make ſome obſervations on the remedies which have been recommended as ſpecifics in this diſeaſe.

The means of obviating the inflammatory diatheſis are the ſame as in other inflammatory diſeaſes, but the languid nature of the inflammation and the tendency to debility in phthiſis greatly circumſcribe their employment.

At one time general blood-letting was very freely employed in the early ſtages,* and ſome adviſed it to be repeated two or three times a week as long as the buffy coat appeared. It is now employed much more ſparingly. When the pain is ſevere, the breathing difficult, and the pulſe unuſually hard, if leſs debilitated means have failed, a moderate blood-letting is proper. Local, is preferable to general, blood-letting, and when the inflammatory ſymptoms are conſiderable, is often employed with great advantage. I ſhall ſoon have occaſion to ſpeak of it more particularly. The ſymptoms juſt mentioned are ſuch, it is evident, as can only attend an early period. It is almoſt unneceſſary to ſay, that when the expectoration has become purulent, and the night ſweats attend, loſs of blood in any way is inadmiſſible; the motive for it no longer exiſts.

Sydenham recommends the free uſe of cathartics at the commencement, and if it ever is proper, it is at this period.

* See the obſervations of Sir J. Pringle and others.

What has been ſaid of blood-letting is in a great meaſure true of catharſis, when employed with a view to reduce excitement. Blood-letting, however, is more effectual, and on ſeveral accounts preferable for this purpoſe. Cathartics, therefore, are chiefly uſed for ſupporting the regular action of the bowels. In inflammatory affections of the cheſt in general, we have ſeen, much purging is ſeldom beneficial. In the early ſtages ſaline cathartics are the beſt.

Diaphoretics have been much employed when the excitement was conſiderable. The antimonium tartarifatum has the additional advantage of promoting expectoration. Its debilitating effects, however, make it a doubtful remedy, except in the commencement, and when the excitement is is greater than uſual. It is only at an early period, indeed, that diaphoretics of any kind are proper. The ſaline diaphoretics, particularly the acetated ammonia, and nitrate of potaſh, uſed in ſmall doſes and much diluted, appear beſt adapted to phthiſis. I have often ſeen great advantage from their cooling effects. If only uſed when the ſkin is hot and dry, and the pulſe pretty ſtrong, they will rather prevent than occaſion an increaſe of debility, few things debilitating more than a ſtate of increaſed excitement. Saſſafras and ſarſaparilla were once much uſed as diaphoretics in this diſeaſe, but are now regarded as inſignificant medicines; and guaiacum, which has alſo been much recommended, is too heating.

Emetics have been employed with a view to reduce the fever and promote expectoration, and at an early period they ſeem often to be of ſervice in both theſe ways, but they have been frequently repeated throughout the diſeaſe, and have been ſuppoſed to poſſeſs a ſpecific power in phthiſis. I ſhall ſoon have occaſion to make ſome obſervations on this uſe of them.

Of the acids and neutral ſalts, thoſe juſt mentioned, and the ſaline mixture in a ſtate of effervefcence, at an early period, the vitriolic acid when a tendency to ſweating has ſupervened, and at all periods, freſh acidulous fruits are the beſt. Dr. Percival ſays, that although the pulſe in hectic fever is at firſt reduced by the uſe of nitrate of potaſh, it afterwards riſes higher than before. I have not obſerved the latter effect from a moderate uſe of it. Muriate of ammonia has been much recommended by ſome writers, either alone or with nitrate of potaſh, but ſeems to be much inferior to the latter. Dr. Cullen thinks the vegetable acids preferable to the mineral, as they are ſafer and can be taken in larger quantities. This obſervation applies only to the early periods of the diſeaſe; after the ſweats come on, no acid is equal to the vitriolic.

While there are hopes of reſolving the inflammation of the tubercles, the diet ſhould ſo far co-operate with the other means employed, that the patient ſhould avoid both ſolid animal food and broths. But there is no period of phthiſis, perhaps, unleſs the ſymptoms approach to thoſe of pneumonia, where the diet ſhould be very ſpare. A milk diet, therefore, is proper at an early period, and, indeed, almoſt univerſally recommended. Freſh ſubacid fruits, I have juſt had occaſion to mention. They tend to allay excitement, and correct any redundancy of bile. If they occaſion diarrhœa, it muſt be checked by mild aſtringents and anodynes. Hoffman even declares, that he has ſeen confirmed phthiſis cured by large quantities of ſtrawberries.

Some of the mineral waters impregnated with carbonic gas, and common water combined with a large quantity of this gas, have been recommended for the drink of phthiſical patients. The good effects of theſe waters, if they have any, that deſerve to be mentioned, probably ariſe from the

effects of the gas on the ſtomach. It is often a grateful ſtomachic.

Much attention has been paid to the choice of milk in phthiſical caſes. Cows and goats milk, if uſed in conſiderable quantity, oppreſs the ſtomach, ſo that the lighter kinds of milk, particularly that of aſſes, have been preferred. Aſſes milk is ſuppoſed by many to poſſeſs medicinal powers in phthiſis. How far this opinion is well founded it is difficult to ſay. Women's milk has been ſtill more celebrated in this diſeaſe. Van Swieten, Dr. Robinſon, and others, relate caſes in which they aſcribed the cure to it. Mares' milk has alſo been recommended. In ſhort, the great objects are, that the food ſhould be nouriſhing, eaſy of digeſtion, and afford as little irritation as poſſible while digeſtion goes on.

Such are the means of fulfilling the firſt indication. The reader will perceive, that in this part of the treatment we have it more in view to ſave and ſupport the patient's ſtrength, than in other inflammatory diſeaſes. The neceſſity of this ſeems to ariſe from the ſcrofulous nature of tubercular inflammation, which is ſo immediately connected with a debilitated ſtate of the ſyſtem, that every cauſe of debility, as we have ſeen, may excite it.

We are now to conſider the means employed with a view to ſupport the ſtrength. This indication applies chiefly to the more advanced periods of the diſeaſe. It is anſwered by an attention to diet, exercise, and climate, and by the uſe of tonic medicines.

In the purulent ſtage of phthiſis, the diet ſhould be more nutricious. A certain quantity of the milder kinds of animal food and wine are proper, if they are not found to increaſe

the exacerbations. Some, indeed, maintain, that ſuch a diet is often proper in the early ſtages, and it is certain that in external ſcrofulous inflammation, not only the moſt nutricious diet, but tonic medicines are often uſed with advantage. Dr. May, in his treatiſe on pulmonary conſumption, and ſome other writers have related caſes in ſupport of this plan; but it does not ſeem well aſcertained in what caſes it is proper, and it is certain that in many it is injurious. When during the remiſſions there is great depreſſion of ſtrength, a little wine, if the inflammatory ſymptoms are not conſiderable, is generally allowed at all periods of the diſeaſe. It is found much leſs apt than animal food to increaſe the exacerbations.

Many of the obſervations made on ſleep and exerciſe, in the ſection on the treatment in the intervals of intermitting fever, are applicable to phthiſical caſes.

With regard to the former, there is little to be added to what was there ſaid. It is ſometimes prevented by the cough. While the excitement is conſiderable, the employment of opiates is in ſome degree a doubtful practice; although the excitement is ſeldom ſuch as wholly to exclude their uſe, eſpecially combined with ſaline medicines. In the advanced ſtages they may be given more freely. As the moſt effectual means of allaying the cough, they doubly diſpoſe to ſleep. I ſhall have occaſion to make ſome farther obſervations on the uſe of opiates, in conſidering the means employed for relieving this ſymptom.

With reſpect to exerciſe, it chiefly demands attention, that it ſhall be ſuch as may be continued for ſome length of time without fatigue, and does not much accelerate the circulation. Geſtation of various kinds, therefore, is preferable to any kind of exerciſe, depending wholly on the patient's own exertions.

Some obſerving the bad effects of fatigue, have propoſed

that thofe labouring under phthifis fhould wholly abftain from exercife, and when the febrile fymptoms are confiderable, and particularly in the earlier ftages, this may fometimes be proper. But it is a difeafe of fuch continuance, and depending fo much on the ftate of the general habit, that fome attention to exercife is generally indifpenfible. Many go to the oppofite extreme, and maintained that certain kinds of exercife may be regarded as fpecifics in this difeafe.

Sydenham's authority has contributed to render riding on horfeback in phthifis a general practice, and when the ftrength is fuch that it can be continued for a fufficient length of time, it is perhaps preferable to every other, although we have to lament that Sydenham's obfervation, "Sane haud "multo certius cortex Peruvianus febri intermittenti, quam "in hac ætate equitatio phthifi medetur," has not been confirmed by obfervation. He remarks, that in thofe who were cured of phthifis in this way, a tumor rofe in the neck not very different from fcrofulous tumors.

An indifcriminate ufe of any particular mode of exercife in this difeafe feems to be improper; the degree and kind muft be fuited to the patient's ftrength. It fometimes happens, that riding on horfeback increafes the dyfpnœa, and occafions pains of the cheft, or is attended with fatigue. It muft then be changed for gentler exercife, and riding in a carriage is often beneficial, and generally well borne by phthifical patients. "All the modes of geftation," Dr. Cullen obferves, "that are employed on land may fall fhort of the "effects expected from them, becaufe they cannot be ren-"dered fufficiently conftant, and therefore it is that failing, "of all modes of geftation, is the moft effectual in pneu-"monic cafes, as being both the fmootheft and moft con-"ftant."

There has been much difference of opinion respecting the circumstances to which the benefit derived from sea voyages ought to be ascribed. Many, with Dr. Cullen, ascribe it to the constant and moderate exercise; others, to the purity of the sea air, and the constant change of air. If the benefit derived from change of air, except it be to a purer air, or one different in temperature or moisture, ought to be ascribed to the occupation of the mind, and the cheerfulness occasioned by a constant change of scene, as seems highly probable; it is not likely that much is to be attributed to change of air in a sea voyage, unless it be to a more southern latitude.

Some have ascribed much of the good effects of sea voyages to the smell of the tar and rosin of the ship, and many to the sea sickness and vomiting. On the cases enumerated by Dr. Gilchrist,* Dr. Reid observes, "The patients were generally sea-sick, and vomited much bile; and in some the "good effects ceased when they grew familiar to the ship's "motion, and were no longer sea sick. He relates the case "of a consumptive patient who went to sea three times, "the distance ten leagues; each time he was sick, vomited "bile, and was cured of his disease. In the last, where the "patient was at sea only five or six hours, the effects could "not proceed from the air or exercise." Dr. Carmichael Smith, on the other hand, in his treatise on the effects of swinging in pulmonary consumption, remarks, that if the benefit derived from sailing were owing to the sickness and vomiting it occasions, its good effects ought always to be in proportion to these. But this, he maintains, is so far from being the case, that he has seen the greatest benefit from sailing where the patients were either little or not at all af-

* Dr. Gilchrist, on the use of sea voyages in medicine.

fected with naufea and vomiting; while, on the other hand, patients have been much affected with both during the whole time they were at fea, and yet neither the cough nor fever relieved.

Dr. Smith attributes the benefit derived from failing to the motion, and conftant change of pofture, both to one more or lefs bent, and from or towards the horizontal pofture.

It is probable that the fame circumftances in failing may not be equally beneficial in every cafe. Their effects, in all probability, in fome degree depend on the caufe of the difeafe. In many cafes it feems probable that the good effects of failing are not to be afcribed to any one, but a combination of all its circumftances, particularly to that of the ficknefs and conftant gentle exercife.

Dr. Smith ftrongly recommends fwinging, and fays, that the cough is fufpended, and the frequency of the pulfe generally diminifhed, after the patient has been in the fwing about ten minutes. In fourteen cafes, he thinks the difeafe yielded to this remedy. The patient was generally in the fwing from ten minutes to half an hour at a time. Others, however, have not met with the fame fuccefs from it. "We are forry to add," Dr. Duncan obferves, after giving an account of Dr. Smith's treatife, in his Commentaries for the year 1788, "that "from our own experience we cannot fay much in favour of "fwinging. Since the publication of Dr. Smith's treatife "we have had recourfe to it in a confiderable number of "cafes. In fome few, where there were fymptoms giving "a prefumption of phthifis, benefit feemed to arife from it; "in others, though employed at a period when the fymp-"toms were very flight, it had no influence either in "checking the progrefs of this infidious difeafe, or in "preventing its fatal conclufion. And, indeed, we have

" not met with any one caſe where phthiſis had decidedly " taken place, in which any material benefit aroſe from its " employment. With ſome patients the ſicknefs it occa- " ſioned was ſo diſtreſſing, that they could not be prevailed " upon to give it a proper trial; while with others it pro- " duced no obvious effect whatever, and particularly no " change on the ſtate of the pulſe." The experience of others has probably coincided with that of Dr. Duncan, as the remedy has not come into uſe.

With regard to climate, it has always been obſerved that phthiſical patients are more or leſs relieved by the ſummer, their complaints generally increaſing as the winter comes on, and gradually becoming worſe during the winter and ſpring, particularly the latter ſeaſon. This, together with phthiſis being rare in warmer climates, ſuggeſted the propriety of ſending thoſe afflicted with this diſeaſe to ſuch climates; and when the change has been made at an early period, it has often been ſucceſsful. In moſt inſtances, it is delayed too long to be of any uſe.

The exhauſting heats of ſultry climates have not, for reaſons ſufficiently evident, been judged proper. Phthiſical patients are adviſed to viſit the mild climates of Madeira, Sicily, Italy, Spain, or the ſouthern parts of France. Whatever climate is preferred, as much uniformity of temperature as poſſible ſhould be ſtudied. Wearing flannel next the ſkin tends both to ſupport the perſpiration in cold weather, and to prevent ſudden chills when the weather is warm. Nor are the ſweatings in this diſeaſe much, if at all, increaſed by this practice. The patient may be kept cool by having the reſt of his clothes light, and (in warm climates) the flannel of a very thin texture. The chill of damp linen is particularly hurtful. To prevent catarrhal affections is of

the firſt importance in the treatment of phthiſis. The night air ſhould be carefully avoided.

It is the opinion of many that the chief advantages of a warmer climate may be obtained in this country by confining the patient to apartments kept uniformly of a proper temperature. Although he cannot by this means enjoy the full advantages of freſh air, I can, from my own experience, ſpeak of its excellent effects in the colder ſeaſons.

The tonics which have been chiefly employed in phthiſis, are, the bark, iron, cold bath, zink, and vitriolic acid, and certain mineral waters.

It is not ſurpriſing in a diſeaſe which has been ſo commonly treated as merely inflammatory, that the uſe of the bark ſhould have been very generally reprobated, eſpecially as tubercles have by many been regarded as of the ſame nature with obſtruction of the liver, ſpleen, &c. for the production of which, we have ſeen, the bark has erroneouſly been blamed. Many, Raulin, Deſault, &c. have for theſe or ſimilar reaſons, condemned the bark without a trial. Others have condemned it from finding that it increaſes the exacerbations, anxiety, and dyſpnœa. When ſuch are its effects, it ought to be immediately laid aſide. The caſes where it appears to have been of ſervice are thoſe in which the debility is great, and the remiſſions well marked, ſo that the diſeaſe has more of the intermitting form than hectic fever generally aſſumes.

" In ſome caſes," Dr. Cullen, who is no advocate for the uſe of bark in phthiſis, obſerves, " when the morning " remiſſions of the fever were conſiderable, and the noon " exacerbations well marked, I have obſerved the Peruvian " bark given in large quantities with the effect of ſtopping " theſe exacerbations, and at the ſame time of relieving the

" whole of the phthifical fymptoms; but in the cafes in " which I obferved this, the fever fhewed a conftant ten- " dency to return, and at length the phthifical fymptoms " alfo returned and proved quickly fatal." In the firft volume of the Medical Communications the reader will find cafes of this kind more fucceffully treated with bark by Dr. Samuel Chapman. It would appear, however, from fome obfervations, that even where the remiffions were lefs confiderable, the bark has occafionally been fucceffful. Burferius fpeaks of its ufe in phthifis in the higheft terms. Its wonderful virtue, he obferves, is moft remarkable in thofe who in their youth laboured under fcrofulous fwellings. In fuch habits the excitement is generally moderate. The Peruvian bark has alfo been much praifed where there is confiderable admixture of blood in the fputa. Upon the whole, our experience feems to be deficient in this part of the fubject; but from the trials which have been made, as well as from phthifis partaking fo much of the nature of fcrofula, in which the bark is often of great ufe, it feems to demand more attention than it has received from the practitioners of this country.

Iron produces fome of the effects of the bark, and is, perhaps, lefs apt to increafe the oppreffion, dyfpnœa, and febrile exacerbations. It has been chiefly recommended in incipient phthifis, arifing from amenorrhœa, the conftitution being relaxed, and the inflammatory fymptoms moderate. In thefe cafes, combined with other ftimulants, particularly myrrh, by reftoring the menftrual difcharge, it often, at the fame time, removes the phthifical fymptoms.

Iron has been frequently employed in phthifis, in the different mineral waters. Phyficians, fays Raulin, who have had moft experience of pulmonary confumption, have recommended the ufe of ferruginous mineral waters in the

earlier ſtages. I have ſeen theſe waters, he adds, have good effects chiefly in the phthiſis from tubercles. Theſe caſes were probably of the ſame nature with thoſe in which Burſerius recommends the bark. The reader will find, in a variety of authors, different mineral waters recommended in this diſeaſe. In this country they ſeem to have loſt their credit. The Briſtol water was once celebrated in this diſeaſe. Much of the good effects of mineral waters are doubtleſsly to be aſcribed to the change of ſcene, often of climate, and the amuſements and regular exerciſe which frequently attend their uſe. In moſt phthiſical caſes, the ferruginous mineral waters are too ſtimulating, and on this account many practitioners have wholly condemned their uſe.

The cold bath has been recommended by Dr. Ruſh and others. If it is ever admiſſible, it is in the caſes in which bark and ſteel are recommended. In theſe, however, the debility is often ſuch as to preclude its employment; and, upon the whole, moſt practitioners have been afraid to make a trial of ſo doubtful a remedy.

Zink has been much praiſed as a tonic in phthiſis, particularly by Dr. Percival; reſpecting it future experience muſt determine. Small doſes of ſulphat of zink ſeem often to poſſeſs a tonic, with little or no heating property, and in larger doſes, many think it the beſt emetic in this diſeaſe.

Of mineral acids, I ſhall have occaſion to ſpeak more particularly. It is only neceſſary to obſerve here, that they are among the beſt tonics in phthiſis.

Such are the means of fulfilling the general indications in phthiſis.

We are now to conſider thoſe of alleviating certain ſymp-

toms, the treatment of which do not fall under these indications.

The chief of these are coughing, suppressed or difficult expectoration, dyspnœa, pains of the thorax, vomiting, profuse sweats, and diarrhœa.

The most effectual means of relieving the cough, anodynes, I have already had occasion to mention. There are few cases of phthisis in which they may not, to a certain extent, be employed at every period. In advanced stages the excitement is never such as to forbid them, and the relief they afford renders them useful when there are no longer hopes of permanent advantage from any remedy.

I have in treating of another disease, had occasion to make some observations on the manner in which opiates promote expectoration, by at first interrupting it. On this account they must be used with caution, when the debility is great, as the lungs may be so oppressed by the retention of what should be expectorated, that suffocation may ensue. This, however, is less to be feared in phthisis than in some other affections of the chest.* In the advanced state of the disease, they tend to increase the sweats; but this effect may be counteracted by the use of astringents, and the relief they afford generally more than compensates for it.

Many other medicines have been recommended, with a view to relieve the cough in phthisis. The best of them consist of mucilaginous fluids, either prepared by decoction from vegetables, or by dissolving gum arabic or tragacanth in water. It was at one time customary to give very large quantities of such medicines. In modern practice, they are,

* See the observations on this subject in the chapter on pneumonia notha.

perhaps, uſed too ſparingly. They ſeem to ſerve a double purpoſe, beſmearing the fauces, and lining, as it were, the ſtomach and bowels; in both ways often preventing the irritation which excites cough. For the former purpoſe they ſhould be given in ſmall and repeated doſes; for the latter, they muſt be given in larger quantities. When given in very large quantity, however, they often, particularly the gums, oppreſs the ſtomach. Of the decoctions, none ſeems better than water-gruel or barley-water. The diet in phthiſis ought always to be more or leſs mucilaginous.

To the ſame head belongs a variety of oily ſubſtances which are more apt to oppreſs the ſtomach. They are never, perhaps, to be given in large doſes, but conſiderable advantage is ſometimes derived from combining ſmall quantities of them, particularly the ſpermaceti, with the mucilaginous mixtures uſed for the purpoſe of allaying the irritation in the fauces.

Such a mixture, with the addition of a certain quantity of opium, appears to be the moſt powerful means of allaying the cough, and about half a tea-ſpoon-full ſhould be ſlowly ſwallowed as often as the irritation to cough is troubleſome. In ſome caſes, the extract of hemlock will allay it where opium fails. Upon the whole, however, the latter is by far the moſt effectual. A bit of gum arabic or tragacanth, extract of liquorice, or any other mild ſubſtance poſſeſſed of a conſiderable degree of viſcidity, kept in the mouth, often has a conſiderable effect in allaying this irritation.

The expectoration is often difficult, and ſometimes wholly interrupted. At an early period, nauſeating doſes, particularly of the antimonium tartariſatum, are often the beſt means of reſtoring and rendering it eaſy. At more advanced periods, eſpecially when the temperature and ſtrength of

pulſe are reduced, the various preparation of ſquills and the fetid gums are often employed with advantage.

If the interruption of the expectoration depends on the increaſing debility, the means which have been pointed out for reſtoring the ſtrength will be the moſt likely to recall it.

If it ariſes, as ſometimes happens, from the viſcidity of the morbid ſecretion, inhaling the vapour of warm water or gruel in which onions have been boiled, is the beſt remedy. It has been recommended in all caſes of difficult or ſcanty expectoration, to employ vapour impregnated with turpentine, the various balſams, gums, &c. But the irritating quality of vapour, thus impregnated, renders it a doubtful remedy.

Many of the foregoing means often allay the dyſpnœa, at the ſame time that they reſtore the expectoration, and they may occaſionally be uſed for this purpoſe, although the expectoration is not ſuppreſſed, particularly the ſquills and gums when there is not much heat, and eſpecially when the dyſpnœa ſuddenly increaſes without any evident cauſe. When there is much heat and a dry ſkin antimonial medicines tend to obviate the irritating effect of the gums.

Many ſeem to think, that it is only as expectorants and antiſpaſmodics that the gums ſhould ever be employed in phthiſis. We have reaſon to believe, however, that in certain caſes, they are otherwiſe beneficial. For whatever purpoſe the gums are uſed, if they increaſe the heat and oppreſſion, they will do harm. They generally have theſe effects when there is any conſiderable degree of hardneſs in the pulſe. I ſhall have occaſion to make ſome obſervations on them in ſpeaking of the ſpecifics employed in this diſeaſe.

For allaying the pain, cough, and dyſpnœa, and rendering the expectoration eaſy, few means are ſo powerful as bliſ-

tering, and it is generally proper either to keep up the discharge from the same blister for some time, or, what is often more effectual and less troublesome, to apply a succession of small blisters. They are more generally applicable in phthisis than any of the medicines just mentioned. The excitement, even at the commencement, being seldom such as to counterindicate their use.

When the pulse is hard, local blood-letting is the most effectual of all means for relieving the local symptoms of phthisis, and should precede blistering. It may be occasionally repeated in the early stages with great advantage, its extent and repetition being regulated by the prevalence of the inflammatory symptoms. When the inflammation is inconsiderable, blistering alone is preferable. The effects of blisters though generally less considerable and not so speedy, are often more permanent, and always less debilitating.

Nothing is more pernicious in diseases of debility, than continued vomiting. I have more than once had occasion to point out the means of allaying this symptom. The saline draughts where the skin is dry, or a mixture of the sulphuric acid, conserve of roses, and peppermint water, when the tendency to sweat is considerable, will often succeed. If these fail, a dose of solid opium, or opium with camphor, may be tried. Blistering the region of the stomach is often of use. But vomiting in phthisis, for the most part, arises from the violence of the cough, and is best allayed by the means which alleviate this symptom.

No symptom more rapidly reduces the strength, than the sweating which so generally attends the advanced stages of phthisis. The various means which tend to restore the strength, tend at the same time to check this symptom. Dr. Percival observes, that a biscuit steeped in wine, a draught of wine, or a dose of the solution of myrrh, often succeed in

checking the ſweat. Lime water has been much celebrated for this purpoſe. The reader will find it recommended by Sir John Pringle, Burſerius, and others; but there are no medicines of equal efficacy with the mineral acids, particularly the ſulphuric. Some maintain that the ſweating ought not to be wholly checked; but this injunction is unneceſſary, as it is hardly ever in our power to do ſo. I have never ſeen any bad effects from checking it as far as we can. The relief it brings is never complete and always tranſitory, and the harm which it does is certain. Checking the ſweat, it has been ſaid, tends to bring on the diarrhœa; and there may be ſome truth in this obſervation; but we gain little by preventing the diarrhœa at the expence of the conſtant recurrence of the ſweat. Both are to be checked, as their tendency is equally pernicious.

Van Swieten obſerves, that opium is almoſt the only thing which brings effectual relief in the colliquative diarrhœa of phthiſis, and when it is accompanied with griping pains, and teneſmus, he directed it to be injected with other medicines by clyſter. "Rhubarb," Dr. Cullen obſerves, "ſo "commonly preſcribed in every diarrhœa, and all other "purgatives, are extremely dangerous in the colliquative "diarrhœa of hectics. Freſh ſubacid fruits, ſuppoſed "to be always laxative, are often in the diarrhœa of "hectics, by their antiſeptic quality, very uſeful." Dr. White recommends the columba, and refers to a treatiſe of Dr. Percival on this medicine, in which are ſeveral caſes where it checked obſtinate vomiting and purging, when other means had failed.

I have followed thoſe who have truſted chiefly to ſimple aſtringents, combined with opium, generally employing either the kino or extract of logwood, and have always found them more or leſs ſucceſsful, till at length the powers of life

gradually declining, all medicines lose their effect. Whatever other means we employ, some mucilaginous fluid is proper for the purpose of allaying irritation. It may be observed of the diarrhœa, as of the sweating, that all means of strengthening the system, generally tend to check it.

The menstrual discharge, we have seen, always sooner or later ceases in phthisis. This alarms the patient, and when it happens at an early period, the disease is generally attributed to it. The physician knows that it is merely a symptom of increasing debility, that it is in vain to use any direct means to restore its regular returns, and that could it be restored, its only effects would probably be, that of increasing the debility, and consequently hurrying on the fatal termination.

It is hardly necessary to add, that avoiding all the exciting causes forms an essential part of the treatment of a disease whose causes are so numerous and frequently applied; for it appears, from what was said of the causes of phthisis, that every thing which tends to diminish the strength or irritate the lungs may be ranked among them.

It only remains to make some observations on the medicines which have been employed as specifics in this disease.

I have already remarked that emetics have been employed in this way.* "People at first," Dr. Reid observes, are "apt to be alarmed, fearing, that by taking vomits every "day, the tone of their stomachs will be injured; but I "can safely affirm, and I am warranted to do so by the "best of all tests, experience, that I never saw any bad

† See the observations of Dr. Reid and Dr. Fort Simmons on this disease, a paper by Dr. Senter, in the first volume of the Transactions of the College of Physicians at Philadelphia, &c.

"effects from a course of this kind continued for weeks "with proper precautions; on the contrary, I have scarcely "met with one instance where the general health was not essen- "tially improved." In the earlier periods, he sometimes used the antimonium tartarisatum, at other times ipecacuanha. The sulphate of zinc, as the most speedy, has been recommended. Dr. Senter used the sulphate of copper with ipecacuanha.

Emetics seem best adapted to cases attended with considerable excitement, and consequently to the earlier stages of the disease. A sufficient trial has not perhaps been made to enable us to speak positively of the merits of this practice. We know that the relief obtained from emetics in phthisis is generally transitory, and physicians will not easily admit that their frequent repetition in this disease can produce any effect which will compensate for their debilitating tendency.

Since the days of Morton, who recommended a variety of balsams in phthisis, these have generally formed part of its treatment. Dr. Fothergill was among the first who opposed their use, and they are at present falling into neglect in this country. Burserius, and many others, even the latest foreign writers, still place much reliance on them. Van Swieten observes, that as balsams are very efficacious in curing external ulcers, they are recommended in those of the lungs. The best physicians, he continues, use the native balsams; that of Mecca, for instance, Copaiva, and Peru, in preference to the artificial balsams so celebrated by the chemists. Boerhaave also condemns the latter, which have been called balsams of sulphur, and are prepared from sulphur and expressed or distilled oils. Sir John Pringle made a full trial of the balsams of Peru and Copaiva, and seems at first to have been prejudiced in their favour; yet he observes, that he has, since the former editions of his work, been so often disappointed in their effects in phthisis, that he had wholly laid them aside. "The

"balſams, whether natural or artificial," ſays Dr. Cullen, "which have been ſo commonly adviſed in caſes of phthiſis, "appear to me to have been propoſed on no ſufficient "grounds, and to have proved commonly hurtful. Along "with balſams of all kinds may be claſſed the various reſi-"nous gums, which have been recommended in phthiſis, "generally with the ſame view, and ſeldom with better "effects." Dr. White, of York, ſpeaks in ſtill ſtronger terms, reprobating the balſams of Copaiva, Peru, Tolu, and Benjamin, turpentine, opobalſam, gum ammoniac, guaiacum, ſtorax, olibanum, and all their preparations.

The obſervations of theſe writers are, perhaps, too indiſcriminating. We have reaſon to believe that in ſome debilitated and languid habits, medicines of this kind may occaſionally be uſeful; I have myſelf made a trial of ſome of them with good effects, myrrh I have already had occaſion to mention. I have alſo occaſionally uſed ſtorax combined with opium, with evident advantage. Dr. Fort Simmons warmly recommends the balſams of Copaiva and Peru; and Dr. Saunders and Dr. Percival ſpeak highly of the effects of myrrh. "I regard this remedy," the latter obſerves, "as the "moſt uſeful which modern practice has adopted in con-"ſumptions." Others, however, have not met with the ſame ſucceſs from it. Dr. Cullen ſays, that myrrh has not appeared to him to be of any ſervice in phthiſis and in ſome caſes to have proved hurtful. There is the ſame difference of opinion reſpecting the uſe of camphor, from which leſs is to be expected. Tar water has been much celebrated. But the obſervations reſpecting it are not ſufficiently accurate to enable us to form any certain judgment reſpecting its effects. I have already had occaſion to obſerve, that all this claſs of medicines, when they heat and irritate, do harm.

Phyſicians in queſt of ſome ſpecific that ſhall at all times relieve this diſeaſe, appear not to have been ſufficiently attentive to adapt the means employed to the circumſtances of the caſe, ſo that the ſame means have often done both good and harm.

Mercury has been recommended as a ſpecific in phthiſis, but in general with little ſucceſs. Dr. Cullen ſays, that in many trials which be made with it, it proved of no ſervice, and generally appeared to be manifeſtly hurtful. Dr. Ryan remarks, that although the remedy had never been employed in phthiſis, its pernicious effects in other ſcrofulous caſes would have left little hopes of its proving uſeful in this diſeaſe. The juſtice of this obſervation may be called in queſtion. Modern practice has pointed out certain caſes of ſcrofula, in which an alterative courſe of mercury is often employed with advantage.

"If there are any grounds," the author juſt mentioned obſerves, "for ſuſpecting that the ſyphilitic virus is the "cauſe of the diſorder, then mercury is to be adminiſter-"ed without further heſitation." If what was ſaid in ſpeaking of the cauſes of phthiſis be juſt, the ſyphilitic virus never produces phthiſis, except in thoſe very rare caſes in which a venereal ulcer ſpreads from the mouth to the trachea and lungs. If ſyphilis tends to produce phthiſis only in proportion as it occaſions debility, as appears highly probable, the exhibition of mercury may even be more pernicious in theſe, than in moſt other caſes. Mercury, indeed, has been chiefly employed in phthiſis, where the concurrence of ſyphilis rendered it neceſſary: and its effects have generally been ſuch as to deter from the uſe of it in the former diſeaſe.

No means employed in phthiſis better illuſtrate a remark juſt made on the impropriety of an indiſcriminate uſe of

any medicine in this diſeaſe. In the generality of caſes the only effects of mercury would probably be that of haſtening the fatal termination. Yet in one variety, I have found it the beſt remedy, and have repeatedly ſeen the patient ſaved by it, after the purulent expectoration and hectic fever had come on; I allude to the caſes occaſioned by induration and enlargement of the abdominal viſcera. I have already had occaſion to obſerve, that this cauſe of phthiſis has often been overlooked, which is probably the reaſon that, as far as I know, no writer has pointed out this variety of the diſeaſe, as that in which mercury is beneficial.

I have alſo employed it with advantage in the incipient ſtage of phthiſis, attended with a ſcrofulous affection of the meſenteric glands. There is reaſon, I think, to believe, that an alterative courſe of mercury may tend to reſolve indolent tubercles.

Cicuta has with much plauſibility been recommended for diſcuſſing tubercles. It has been ſo ſeldom employed in phthiſis, however, that its effects are not aſcertained. Dr. Cullen, in his lectures on the treatment of phthiſis, we are informed by Dr. Ryan, uſed to recommend to his pupils a trial of the cicuta and coltsfoot, when there was reaſon to ſuſpect the preſence of tubercles. But he did not ſpeak from any trials he had made. Coltsfoot has been employed for reſolving ſcrofulous tumors; but upon the whole, with little ſucceſs.

Among the medicines of this kind may be mentioned the kali, which has not perhaps in phthiſis met with all the attention it deſerves. Both the fixed and volatile alkalis have lately been propoſed as a cure for various forms of ſcrofula, and the former * to an extent hitherto unknown.

* See a Treatise by Mr. Brandish on the effects of the fixed alkalis in scrofula.

I may refer to the works of Burſerius and other foreign writers for a variety of ſpecifics employed in this diſeaſe. Some of them are innocent, and this, perhaps, is the moſt favourable account that can be given of them.

The lichen iſlandicus has been much celebrated.* After being ſteeped in water for ſome time, it is uſed as an article of diet in phthiſis. I have repeatedly made a trial of it without any advantage.

The fleſh and broth of vipers have ever ſince the days of Galen been a favourite remedy, and are even recommended in various caſes by Mead, Morgagni, De Haen, and others. In this country their credit has only been eſtabliſhed among the vulgar.

Public expectation has lately been much raiſed by the propoſal of the uva urſi, as a cure for phthiſis, from ſo reſpectable a quarter, that phyſicians have felt themſelves called upon to give it a fair trial. From the trials I have myſelf made, and which have been made by others with whom I have converſed, it does not appear to anſwer the expectations, to which the fortunate termination of ſome caſes, in which Dr. Bourne † employed it, naturally gave riſe.

The digitalis has been warmly recommended as a ſpecific in this diſeaſe. I have met with a few, and but a few, inſtances in which it ſeemed to be of ſervice, out of very many in which I have uſed it. When hæmoptyſis attends phthiſis its beneficial effects in checking the hemorrhagy are more uniform.

An atmoſphere in which the uſual proportion of oxygen has, by various means, been diminiſhed, was ſome years

* See Observations on Pulmonary Consumption, and the Use of the Lichen Islandicus in that Disease, by J. B. Regnault.

† See Dr. Bourne's Treatise on the use of the uva ursi in Phthisis Pulmonalis.

ago recommended as a ſpecific in this diſeaſe. In an early ſtage, and even after the purulent ſtage has commenced, while the pulſe ſtill retains a degree of hardneſs, any innocent means which obviate the inflammatory tendency are often ſerviceable. We muſt ſuppoſe that the oxygenous part of the atmoſphere tends to ſupport inflammation of the lungs, becauſe it has been found that breathing pure oxygen gas excites it.

It is needleſs to enter into any detail of certain ingenious opinions reſpecting the modus operandi of this remedy, and the ſuppoſed hyperoxygenation of the blood in phthiſis. It is enough to ſay, that any perſon, who, without prejudice, reviews the ſymptoms of the diſeaſe, will be ſatisfied that they are fallacious; and we have reaſon to lament that many of the modes of practice founded on them appear to be equally ſo.*

If a lowered atmoſphere, as a remedy in phthiſis, acts only in the way juſt pointed out, it is merely to be claſſed among the means of leſſening the inflammatory tendency, many of which are equally certain in their effects, and more eaſy in their application. It would have the great advantage, however, of being more conſtantly applied, and impairing the ſtrength leſs than any other.

May not leſſening the proportion of oxygen in the air be of uſe in certain caſes of pneumonia, where the uſual means of relief have failed, or the patient's ſtrength is too far reduced to admit of much veneſection? Is there not reaſon to believe, that advantage might ariſe from the application of oxygen gas to external ulcers, in which the inflammation is too languid?

It is hardly worth while to mention among the ſpecifics in phthiſis the earth bath. It may, perhaps, ſeem ſtrange,

* See various Publications by Dr. Beddoes on this subject.

Van Swieten obſerves, that I ſhould aſcribe any peculiar efficacy in the cure of phthiſis to the effluvia ariſing from the ground. But I have been informed, by a perſon highly deſerving of credit, that through the whole kingdom of Grenada they attempt the cure of phthiſis by an earth bath, and I have ſince read the ſame thing in the works of Franciſco Solano de Luque, who declares that he uſed the earth bath with ſucceſs even in caſes deemed incurable. A hole is dug in the earth, and the patient put in, covered with earth up to the neck, and left there till he begins to ſhiver. As ſoon as he comes out he undergoes a general friction.*

* The reader may also consult the end of Dr. Simmons's Treatise on Phthisis, where he will find some cases in which this remedy was employed.

BOOK III.

OF THE PROFLUVIA FEBRILIA.

ONLY one order of diſeaſes remains to be conſidered, the Profluvia, the definition of which was given in the general introduction, namely,

Symptomatic fever, in which the local affection is an increaſe of ſome ſecretion, not naturally of a red colour.

Under this order Dr. Cullen arranges only two diſeaſes, Catarrh and Dyſentery. If any others have a title to be claſſed with them they are the Cholera and Diabetes. But theſe are ſo frequently unaccompanied by fever, at leaſt through the greater part of their courſe, and often through the whole of it when they terminate favourably, that they cannot be regarded as febrile diſeaſes.

CHAP. I.

Of CATARRH.

CATARRH is defined by Dr. Cullen,

" Pyrexia ſæpe contagioſa; muci ex glandulis membranæ
" narium, faucium vel bronchiorum, excretio aucta; ſaltem
" hujus excretionis molimina."

He divides it into two ſpecies, the common catarrh which always ariſes from cold, and the epidemic catarrh, commonly termed influenza, which, frequently at leaſt, appears to be contagious. With the ſymptoms and mode of treatment of the former, almoſt every body, whether of the medical profeſſion or not, is acquainted; I ſhall not, therefore, detain the reader with any particular account of it. Both its ſymptoms and mode of treatment will ſufficiently appear from what will be ſaid of the more ſerious form of the diſeaſe.

SECT. I.

Of the Symptoms of Epidemic Catarrh.

THIS diſeaſe often comes on like a common cold, but generally with a more conſiderable chilly fit, and a greater degree of laſſitude and dejection; and frequently after continuing without much change for ſeveral days, at length gradually declines. In other caſes, expoſure to cold, fatigue or ſome other cauſe of fever produces a ſudden aggravation of the ſymptoms, or this takes place without any evident cauſe. Sometimes the diſeaſe is more ſevere from the firſt, the febrile, as well as catarrhal, ſymptoms being conſiderable, and the patient from the commencement complaining of great ſinking and debility.

The cough is generally troubleſome, and attended with flying pains of the cheſt, ſometimes with a ſenſe of ſoreneſs or heat extending downwards under the ſternum, or

of anxiety, tightnefs and oppreffion about the præcordia, which induces the patient to prefer the erect poffure. The matter expectorated confifts of mucus or phlegm, and is fometimes tinged with blood, although inflammation has not fupervened, which in the more fevere cafes is not uncommon. In fome cafes little or nothing is expectorated, and fometimes, though much more rarely, there is little or no cough. In many cafes the cough continues after the febrile fymptoms have abated, with hoarfenefs, and fometimes lofs of voice.

The fauces are frequently affected, often inflamed, as in cynanche tonfillaris; in the moft fevere cafes they are fometimes ulcerated, and fometimes covered with aphthæ. The eyes are often heavy and inflamed, the face florid, fometimes fwelled and bloated. There is frequently a difcharge, fometimes profufe, from the eyes and nofe, with fneezing and fwelling of the eye lids. The difcharge from the nofe, like that from the lungs is fometimes bloody, and in fome cafes there is a confiderable flow of blood from the nofe.

The patient generally complains of head-ach, increafed by the cough or any jolting motion, which, fometimes in the progrefs of the difeafe, becomes intenfe. It is often deep-feated and felt in the courfe of the frontal finufes. In fome cafes the pain is felt chiefly in the face and jaws. A fenfe of noife in the ears, and deafnefs, are not uncommon, and the tafte and fmell are often impaired. The patient frequently complains of giddinefs and pain on moving the eyes, light and noife being particularly offenfive. In fome cafes there is a degree of drowfinefs almoft amounting to coma, in others, confufion of head, and even delirium; neither coma nor delirium, however, are frequent.

The alimentary canal is often much difordered. The tongue at an early period is generally covered with thick white mucus, which, in the progrefs of the difeafe, often

aſſumes a brown colour, and the thirſt is frequently greater than uſually attends the ſame degree of fever. Pains in the ſtomach and bowels are not uncommon, and nauſea, vomiting, and diarrhœa occaſionally attend; more frequently the bowels are conſtipated. It has been remarked, that the cough is moſt ſevere when the tendency to conſtipation is greateſt. Bilious ſymptoms are not unuſual, and a degree of cholera ſometimes ſupervenes.

The fever is often, but by no means uniformly, proportioned to the catarrhal ſymptoms. Its moſt ſtriking characteriſtic is depreſſion of ſtrength and ſpirits, which I have already had occaſion to obſerve is often remarkable from the firſt attack. In the progreſs of the diſeaſe it ſometimes goes ſo far as to produce ſyncope, which is ſeldom attended with danger unleſs it occurs repeatedly. The pains of the head, back, limbs, and loins, are alſo frequently more ſevere than is uſual in the ſame degree of fever, and there is often a ſoreneſs of the whole body. It has been remarked that the cough is frequently leaſt ſevere when the pains of the limbs are moſt ſo. Theſe pains, attended with cold ſhivering alternating with fluſhings of heat, and the ſudden proſtration of ſtrength, are often the firſt ſymptoms.

There is frequently a great tendency to ſweating, ſometimes even from the commencement; in ſome caſes it is very profuſe, the urine being high-coloured and turbid. The ſweating is often attended with relief, but ſeldom with a ſudden termination of the diſeaſe.

The pulſe for the moſt part is from 90 to 120. At the beginning it is often full and tenſe, ſeldom hard. If actual inflammation does not ſupervene, it generally becomes ſmall and weak in the progreſs of the diſeaſe, and it is ſometimes in this ſtate from the commencement. In old people, in particular, it ſometimes becomes irregular. The depreſſion

of ſtrength and ſpirits is not always accompanied with a ſinking of the pulſe, which on the whole, is often leſs affected than the other ſymptoms would lead us to ſuppoſe.

The fever is generally conſiderable for two or three days. On the fourth, for the moſt part, it begins to abate, but the loſs of appetite, languor, and debility, continue much longer, often attended with great feebleneſs and ſtiffneſs of the joints. The duration of the fever, however, is various; it is ſometimes protracted even for ſeveral weeks, and has, though rarely, aſſumed the intermitting form. The favourable termination is ſometimes attended with a bilious diarrhœa.

Upon the whole, although this diſeaſe is often ſevere, it cannot be regarded as dangerous except in the old and infirm, in whom it is moſt apt to prove tedious and leave bad conſequences. The fever generally runs higheſt in the young and plethoric. It is often very ſevere in infants. For the moſt part the danger is beſt eſtimated by the degree of cough and dyſpnœa. When relapſes happen they are often more ſevere than the firſt attack. Expoſure to cold and fatigue are their moſt frequent cauſes They often prove fatal in old people.

The chief ſource of danger in epidemic catarrh is its tendency to produce other diſeaſes. In the young and plethoric it ſometimes occaſions pneumonia; in the old, peripneumonia notha, or apoplexy; in the weak and relaxed, typhus. It often induces aſthmatic, bilious, and rheumatic attacks in the prediſpoſed. It ſeems leſs liable to produce phthiſis than we ſhould expect. Sometimes it terminates with purulent expectoration without ſerious conſequences, the pus being merely a ſecretion from the inflamed ſurface of the bronchiæ. It is ſaid ſometimes to have produced croup. In exhauſted habits it ſeems often to accelerate the appearance

of dropſy, or other diſeaſes of debility, and when it ſupervenes on any of the foregoing diſeaſes, it, for the moſt part, greatly accelerates their progreſs. This is particularly the caſe with reſpect to phthiſis. It is often a ſevere diſeaſe in thoſe who labour under any ſpecies of viſceral obſtruction.

SECT. II.

Of the Cauſes of Epidemic Catarrh.

All ages and conſtitutions are liable to this diſeaſe. Females it is ſaid are more liable to it than males. Many alledge that they are only ſo in conſequence of more frequently attending the ſick. Puerperal women are ſaid to be moſt diſpoſed to it. Adults are more liable to it than children.

Thoſe who live in high, cold, and damp ſituations, and thoſe expoſed to the night air, or to any other cauſe of taking cold, have been obſerved to be particularly ſubject to it. Whatever debilitates appears to diſpoſe to it, bad clothing, a ſcanty diet, intemperance, &c.

Much difference of opinion exiſts reſpecting the way in which this diſeaſe ſpreads. It would appear at firſt view, that nothing is more eaſy than to aſcertain whether a diſeaſe is contagious, yet ſo great is the difficulty reſpecting that we are conſidering, that many of the beſt informed confeſs that they have not been able to aſcertain whether it is ſo or not.

"Though I attended to the ſubject," Dr. Gregory obſerves, "I am at a loſs to decide whether the influenza was con-"tagious or not. If contagious it ſpreads by laws pecu-"liar to itſelf."*

On comparing together the various facts on the ſubject, we are almoſt forced to believe that it does not always ſpread in the ſame way, but ſometimes by contagion, and at other times, merely as an epidemic. Inſtances occur in which only one of a family is ſeized with it, notwithſtanding the freeſt intercourſe; even thoſe who ſleep with the invalid eſcape it. In ſome inſtances a whole family is attacked by it at the ſame time, and when it ſpreads from one to another, it appears in ſome in a few hours, in others in a few days, and in others, not till weeks after thoſe of the ſame family have been attacked by it; and ſome eſcape it while it is in the family, yet have it afterwards. One family has had conſtant intercourſe with another labouring under it, without at all ſuffering from it. It has been obſerved that villages in the neighbourhood of, and having conſtant intercourſe with, towns ſuffering from it, have eſcaped, while it has appeared in diſtant towns. And it is not uncommon for it to appear in diſtant parts of the country at the ſame time. This obſervation, however, has been made of other diſeaſes which are certainly contagious, particularly of the plague. Such are the circumſtances which would lead us to doubt the contagious nature of influenza. On the other hand there are many well authenticated inſtances of a family remaining uninfected, till viſited by a perſon labouring under it, and of its then ſpreading rapidly through the family. It has alſo been obſerved in many inſtances, that thoſe near the ſick are moſt liable to it. And on its firſt appearance it has often

* Dr. Currie's Med. Reports, &c. second edition, vol. 2. p. 78.

gone through the individuals of the family in which it firſt appeared before it ſpread to others, and then firſt affected thoſe families more immediately connected with that in which it firſt appeared. Such being the facts, it is not ſurpriſing that there ſhould be much difference of opinion on the ſubject. It is natural to form our opinions from what we ourſelves ſee.

It has been generally ſuppoſed, that the influenza follows the direction of the wind, but from the moſt accurate obſervations, this does not appear to be the caſe. It has been obſerved by ſome, that animals are more unhealthy during the general prevalence of influenza, and ſome have imagined that their diſeaſes reſemble it, but in general they do not appear to be ſubject to any particular diſeaſes at ſuch times.

SECT. III.

Of the Treatment of Epidemic Catarrh.

In the commencement of this diſeaſe, the ſtrict employment of antiphlogiſtic meaſures is more uniformly proper than in ſimple fever, but they are not indicated to the ſame extent as in the phlegmaſiæ. In the employment of evacuations in epidemic catarrh, we muſt always keep in view its tendency to debility; and in the uſe of tonic means, the inflammatory diatheſis, which almoſt always accompanies it.

It is generally proper to begin the treatment with an emetic, which is often indicated by nauſea. If the febrile ſymptoms are conſiderable, an antimonial emetic ſhould be pre-

ferred, and if they continue with tightneſs of the cheſt, but without much depreſſion of ſtrength, the repetition of the emetic is proper.

When unattended by actual inflammation the ſymptoms are ſeldom ſuch as to indicate blood-letting. The excitement can for the moſt part be ſufficiently allayed by abſtinence, a cooling diet, the uſe of cathartics, and antimonial and ſaline medicines.

It ſometimes happens that the bowels are particularly languid. Briſk cathartics are then neceſſary, for it is requiſite in all caſes, particularly at an early period, to keep up a free action of the bowels; but much catharſis appears often to increaſe the debility without affording relief, eſpecially if the excitement is not conſiderable. Evacuations of all kinds, indeed, generally appear to produce more depreſſion of ſtrength than in other ſimilar caſes.

From the expectorant power of antimonial medicines, which, when the excitement is conſiderable, ſhould be continued in ſmall doſes, they anſwer a double purpoſe. When the excitement is not much increaſed, their continued uſe is apt to induce the ſinking and debility ſo characteriſtic of this diſeaſe.

The bed-room ſhould neither be very cold nor very warm, the former increaſes the catarrhal, the latter, the febrile ſymptoms. Dr. Currie uſed the cold affuſion in his own caſe, apparently with good effects. The reader will find his account of it in the 77th and following pages of the ſecond edition of his Reports.

The treatment of influenza is much influenced by the age and habit of the patient, and by its tendency to affect the different cavities. If the patient is threatened with pneumonia or phthiſis, the means detailed in treating of theſe diſeaſes

ſhould be reſorted to; but our practice muſt be more cautious in the former caſe than in ſimple pneumonia.

When the affection of the cheſt is merely catarrhal, if there is nothing in the ſtate of the febrile ſymptoms to counter-indicate the uſe of anodynes, they are generally of great uſe in young people, combined with antimonials. Rubbing a ſolution of opium on the cheſt ſometimes allays irritation, when taking it internally fails. In old people, in whom the influenza often inclines to peripneumonia notha, opiates muſt be uſed with caution. When the expectorated matter is tough and viſcid, and the patient brings it up with difficulty, provided the fever is not conſiderable, the more ſtimulating expectorants, ſquills, ammonia, aſafetida, ſeneka, &c. are indicated. Even where the fever is conſiderable, theſe medicines are ſometimes advantageouſly combined with antimonials, but in general in this caſe they are too heating, and often render the cough tighter.

Bliſtering the cheſt is generally of ſervice, and when the inflammatory tendency prevails, taking blood from it by leeches or cupping, as leſs debilitating, is often better than bleeding from the arm. It has often been remarked that even when the ſymptoms ſeem to demand general blood-letting, it frequently does not produce its usual good effects, although the blood ſhews the buffy coat. In ſome caſes the buffy coat does not appear in this diſeaſe, even when the ſymptoms are ſuch as would lead us moſt to expect it. Thoſe who have loſt much blood either by veneſection or hemorrhagy, generally recover very ſlowly.

In old people, we have ſeen, that influenza is ſometimes accompanied by a determination to the head, which is often relieved by exciting the bowels, making cold applications to the head, taking a little blood from the temples, and bliſtering the nape of the neck. If it goes ſo far as to produce in-

ſenſibility, it is to be regarded as apoplexy complicated with influenza, and treated accordingly.

When this diſeaſe is accompanied with bilious or other affections of the abdominal viſcera, their treatment, in like manner, is to be combined with that of influenza, the debilitating tendency of the latter ſtill being kept in view.

On account of this tendency, it is generally neceſſary after the increaſed excitement and inflammatory ſymptoms have been ſubdued, to allow the patient a more generous diet, and in debilitated habits the moderate uſe of wine. The lighter bitters alſo are frequently uſed with advantage. At earlier periods, ammonia and muſk are employed to relieve the ſinking.

When the diſeaſe has ſubſided, leaving a conſiderable degree of debility without any inflammatory tendency, the bark is often of ſervice.

CHAP. II.

Of Dysentery.

Dysentery is defined by Dr. Cullen,

" Pyrexia contagioſa; dejectiones frequentes, mucoſæ, vel " ſanguinolentæ, retentis plerumque fæcibus alvinis; tor- " mina; teneſmus."

Dr. Cullen agrees with Sir John Pringle in admitting but one ſpecies of idiopathic dyſentery, conſidering as merely accidental the circumſtances which have been regarded as mark-

ing different ſpecies of the diſeaſe; ſuch as the preſence of worms, the diſcharge by ſtool of fleſhy or ſebacious ſubſtances, there being no diſcharge of blood, the appearance of miliary eruption, &c. There would be no end, it is evident, to ſpecies of this kind.

SECT. I.

Of the Symptoms of Dyſentery.

Dysentery ſometimes comes on with the uſual ſymptoms of fever, ſhivering, and the other marks of a cold ſtage, which are ſucceeded by heat and thirſt, and ſoon after by the ſymptoms peculiar to the diſeaſe.

It more frequently happens, however, that an affection of the bowels is the firſt ſymptom. In many caſes the diſeaſe comes on with a common diarrhœa, which gradually aſſumes the form of dyſentery. In other caſes there are from the firſt, ſevere griping, teneſmus, and bloody and mucous ſtools. The febrile ſymptoms then ſoon ſhew themſelves, and there is often a very ſudden proſtration of ſtrength.

Sometimes the attack is very gradual, wandering pains of the bowels diſtreſſing the patient for ſeveral days before the dyſenteric ſymptoms ſhew themſelves, and the fever not making its appearance till ſome time after this happens.

The fever is ſometimes a ſynocha throughout the greater part of its courſe, more frequently it aſſumes the form of typhus at an early period, and in ſome caſes it is a well marked typhus from the firſt.

In the worſt caſes this diſeaſe ſometimes proves fatal in a

few days, during which the patient is reduced to the laſt ſtage of debility; and if he ſurvives many days, the emaciation is extreme, equal to what we ſee in phthiſis. In more favourable caſes the debility comes on leſs ſuddenly.

As the diſeaſe often begins with diarrhœa, the favourable change is often denoting by the return of this ſymptom, the griping and teneſmus abating or ceaſing altogether. The diarrhœa generally ſoon leaves the patient, with no other complaint than a degree of languor and debility, proportioned to the ſeverity of the preceding diſeaſe.

In other caſes, the hardened fæces, which are either wholly retained during the diſeaſe, or partially excreted in ſmall hard maſſes, are at length diſcharged; and the dyſenteric ſymptoms, without any conſiderable diarrhœa, gradually abate.

The duration of dyſentery is various; the mildeſt, like the more ſevere forms, ſometimes run their courſe in a few days, or at moſt weeks. Thoſe in which the ſymptoms are obſtinate without being ſevere, are often protracted for many months.

Such is the general courſe of the diſeaſe. Before proceeding to a more detailed view of the ſymptoms, I may obſerve, that as the fever in dyſentery is not only ſometimes the firſt part of the diſeaſe which ſhews itſelf, but even now and then continues for ſome time before the local ſymptoms appear, and as the degree of fever often ſeems proportioned rather to ſome peculiar virulence of the contagion, than to the local affection, it may ſeem, that the fever is regarded as ſymptomatic of the local affection with leſs propriety in dyſentery, than in the diſeaſes with which it is claſſed. But it appears from a variety of facts, that the contagion of dyſentery, or the putrid effluvia attending it, may excite a real typhus independently of any local affection; in which the latter frequently does not appear for ſome time after the com-

mencement of the fever, and in ſome caſes does not appear at all. Where ſuch a fever, therefore, continues for ſome time before the local affection ſhews itſelf, the caſe is evidently to be regarded as a combination of typhus and dyſentery. In the caſe of ſimple dyſentery we ſhall find ſufficient proof of the general affection depending on the local, the former being conſtantly influenced both with reſpect to kind and degree by the ſtate of the local diſeaſe, ceaſing along with it even when removed merely by local means; and again returning, if it be renewed by errors of diet, or any other cauſe affecting the bowels.

When dyſentery makes its attack ſuddenly, it often comes on with great proſtration of ſtrength, attended with nauſea and vomiting, and a weak and frequent pulſe. More generally after the ſymptoms common to the commencement of febrile diſeaſes, the local affection firſt ſhews itſelf with pain, and mucous and bloody ſtools. The pain is generally of the griping kind, but varies in different caſes, and at different times in the ſame caſe.*

In other caſes, various ſymptoms denoting derangement in the ſtomach and bowels, nauſea, flatulence, acid eructations,

* "Some," Dr. Cleghorn obſerves, "are ſeized with a twiſting "of the guts, which, as they express it, draws up their bowels in- "to knots, and many, instead of griping pains which shift from "place to place and come at intervals, have acute fixed ones in "some particular part of the belly, which occasion complaints as "various as their seat, some being attended with stitches about the "bastard ribs, interrupting their breathing freely, as in the pleu- "risy; others with a pain reaching from one hypochondrium to the "other, cutting them, as it were, in two; while others complain "only of a pain about the pelvis, with a constant fruitless strain- "ing to stool, though the body is for the most part costive, and "discharges nothing but bloody slime."

conſtipation, &c. precede the more characteriſtic ſymptoms of the diſeaſe, ſometimes for ſeveral days.

I have juſt had occaſion to obſerve, that dyſentery is frequently preceded by common diarrhœa. By irritating the inteſtines and waſhing off their mucus, diarrhœa ſeems ſometimes to occaſion it. The deſire to go to ſtool becomes more frequent; the griping and teneſmus more ſevere; the matter voided gradually changes its appearance, and at length conſiſts wholly of mucus mixed with blood.

The quantity of blood in the ſtools is various. Sometimes it appears only in ſtreakes, ſometimes it forms a conſiderable part of the ſtool, and ſometimes almoſt the whole of it; ſo that, were it not for the other ſymptoms, and the darker colour of the blood, the diſeaſe might be miſtaken for the hæmorrhois. From the large quantity of blood ſometimes diſcharged, it has been called the bloody flux. When the ſtools are wholly unmixed with blood, it is termed dyſenteria alba, or morbus mucoſus.

The natural fæces are often retained during almoſt the whole courſe of the diſeaſe, and when they do appear they are in ſmall ſeparate balls, which ſeem to have lain long in the cells of the colon, and have obtained the name of ſcybalæ. The expulſion of theſe, whether ſpontaneous or by medicine, is attended with a remiſſion of the ſymptoms, particularly of the frequency of the ſtools, griping and teneſmus.

Such are the moſt common appearances in dyſenteric ſtools. Subſtances of a fibrous or membranous appearance are often obſerved in them, which have been regarded as portions of the internal coat of the inteſtines abraded; but Zimmerman remarks, that they are very ſeldom of that nature, and generally conſiſt of inſpiſſated mucus. The internal coat of the bowels, he admits, is ſometimes abraded, but ſo late in

the diſeaſe, that inſtead of having a membranous appearance, it is changed into a putrid thin pus, the bowels becoming ulcerated; or is ſo mixed with blood and mucus, that it is impoſſible to diſtinguiſh it.

We are not always, however, to infer that the bowels are ulcerated when we obſerve purulent matter in the ſtools, which is not uncommon, particularly in protracted dyſenteries. We have reaſon to believe, that in the majority of caſes it is ſecreted from the irritated and inflamed ſurface of the inteſtines, without ulceration. Small maſſes of a ſubſtance reſembling fat, are ſometimes found in the ſtools, the nature of which does not ſeem well aſcertained.*

The various ſubſtances paſſed by ſtool are occaſionally diſcharged by vomiting. It is not uncommon in dyſen-

"As to the white substances," Sir John Pringle observes, "which "I compare to suet, I do not know whether they are the same "which Hippocrates calls σαρκες (carunculæ), but they are plainly "described by Aretæus and Cælius Aurelianus, and have since "been taken notice of by later writers, under the name of corpora "pinguia, and variously accounted for. Although I have frequent-"ly seen them, I had neglected to examine them till the autumn "of 1762, when Dr. Huck and I visited a patient ill of dysentery, "who voided such substances. We preserved one of them, and "were both satisfied that the object of our enquiry was nothing "but a bit of cheese, though the patient assured us afterwards he "had tasted none from the beginning of his illness, which had "been of above a fortnight's standing." Sir John Pringle concludes, that they originated either in bits of cheese which had passed from the stomach before the illness, or were formed from milk, the use of which the patient had continued. It is more than probable that they are not the σαρκες of Hippocrates, since Degner and other writers mention both these substances and small fleshy bodies which they term carunculæ. Zimmerman thinks that they are both formed from inspissated mucus, but adduces no proof of his opinion.

tery for worms to be paſſed in both theſe ways.* The matter rejected by vomiting is generally more or leſs bilious, ſometimes, though rarely, ſtercoraceous †

As the diſeaſe advances, the ſtools often become ſanious, and of a dark brown or black colour, with an inſupportable cadaverous fetor, affording a very bad prognoſis, and often indeed indicating the preſence of gangrene. Very frequently at an early period, and ſometimes throughout the greater part of the diſeaſe, they have little or no fetor, but a faintiſh diſagreeable ſmell.

Sydenham mentions caſes under the name of dyſentery, in which there were no ſtools. They cannot, however, be regarded as deſerving this name, and muſt be referred either to the head of colic or enteritis.

The various ſymptoms of derangement in the primæ viæ attend throughout the progreſs of the diſeaſe, and the flatulence ſometimes increaſes to ſuch a degree as to occaſion a real tympanitis. The mouth is foul, the patient complaining of a bitter taſte; the tongue white and covered with tough mucus, or rough and dry, at length becoming black. Aphthæ frequently appear about the root of the tongue, and ſometimes ſpread over the internal fauces.

When we were conſidering eruptive fevers, I had occaſion to obſerve how much eruptions are influenced by the ſtate of the ſtomach and bowels. It even appeared that diſorders of the alimentary canal are not unfrequently their exciting

* In 1743, we are informed by Huxham, that a dreadful dysentery raged, in which worms were passed even by adults and old people. Pringle, Monro, and others, mention worms discharged by vomiting.

† See the abservations of Degner, (De Dysenteria Biliosa) and others.

cauſe. Hence is is, we have reaſon to believe, that dyſentery is ſo frequently accompanied by eruptions of different kinds. The miliary eruption in particular, is a frequent attendant on it.*

By an attention to the local ſymptoms, we may ſometimes determine what part of the inteſtines is affected. If the ſmall inteſtines be the ſeat of the diſeaſe, the pain is often very acute; and the patient complains of its twiſting round the umbilicus; the ſickneſs and vomiting, and the pain and flatulence of the ſtomach, are more urgent than when the diſeaſe is confined to the large inteſtines; the fæces are not paſſed immediately after the griping, and if blood or purulent matter is paſſed, they are more intimately mixed with the other parts of the ſtool.

Hiccup ſometimes ſupervenes early without affording a bad prognoſis, which it always does when it comes on at a late period, and when the other ſymptoms are unfavourable. When hiccup appears early, and proves obſtinate, it may be ſuſpected, that in whatever part of the inteſtines the diſeaſe is ſeated, it is pretty high in the abdomen.

When the diſeaſe has its ſeat in the large inteſtines, the pain, according to Burſerius, is more obtuſe. But Sir John Pringle remarks, that in general the irritation of the ſtomach and higher inteſtines is attended with more ſickneſs in proportion to the griping, and that when the griping is very acute without ſickneſs, it is probable that the diſeaſe is in the large inteſtines. The teneſmus is then moſt urgent, the ſtool

* Degner describes a singular eruption which appeared in one of his patients, blotches and hard black tubercles, like the true pestilential carbuncles, which terminated in a fatal sphacelus.

more quickly follows the griping, and the blood and purulent matter is leſs mixed with the reſt of the excrement.

Sometimes both the large and ſmall inteſtines partake of the diſeaſe. This circumſtance, together with the inteſtines conſtantly changing their place, the ſympathy which ſubſiſts between different parts of them, and their being iu ſome meaſure differently ſituated in different people, often renders it very difficult, with any certainty, to determine the ſeat of the diſeaſe.

There are caſes of dyſentery unattended by fever. In theſe, however, the affection of the bowels is ſlight, and of ſhort duration. In many caſes, we have ſeen, the fever is a ſynocha. This is particularly the caſe in the young and robuſt, and when the diſeaſe is produced by the uſe of fermented liquors, or cold.

When the excitement runs high, the danger is conſiderable, the debility which ſucceeds being proportioned to it. But it is greater when debility attends from the beginning. Even in the early ſtages the debility is often ſuch as to occaſion ſyncope. It ſometimes happens, that the pulſe is natural for the firſt days. We cannot, however, confide in this, eſpecially if the ſtrength is much reduced. In ſuch caſes, about the third or fourth day the pulſe becomes frequent, and often very ſuddenly begins to intermit.

The ſtate of the various functions is the ſame as in ſimple fever, except where it is influenced by the local affection. There is often a painful ſtrangury from the commencement of the diſeaſe, and the urine is ſometimes wholly ſuppreſſed for ſeveral days.

The fever in dyſentery is not always continued; it ſometimes aſſumes the tertian type, and in many caſes remits irregularly. Well marked remiſſions, and ſtill more intermiſſions

of either the local or general ſymptoms, are favourable. They can only be depended on, however, when they are of conſiderable duration.

As the fatal termination approaches, the various ſymptoms of extreme debility gradually ſhew themſelves. A lienteric purging ſometimes comes on, whatever is taken being paſſed with little change; the pulſe becomes extremely frequent, ſmall and irregular; the ſkin is bedewed with cold, clammy, and partial ſweats; the extremities become cold, and the pulſe at length ceaſes. It ſometimes happens, that after theſe ſymptoms the patient lives for ſeveral days, the pulſe and natural heat gradually returning, When the pain and teneſmus remit, the anxiety and reſtleſſneſs increaſing, with dark coloured and offenſive ſtools, and a hippocratic countenance, we are aſſured that gangrene has taken place. It is not uncommon here, as in gangrene of the inteſtines from other cauſes, for the patient to retain his ſenſes to the laſt.

We may look for a favourable termination, when the febrile ſymptoms are mild, ſome degree of appetite remains, and the patient is little troubled with nauſea; when the pains are not very ſevere, nor the ſtools very fetid; when the emaciation, weakneſs, and anxiety are not conſiderable; and above all, when the patient enjoys ſleep, and the ſkin is ſoft and moiſt. The favourable diarrhœa, in which dyſentery often terminates, like that which precedes death, is ſometimes lienteric, though ſeldom in the ſame degree.

Dyſentery rarely terminates in recovery in ſo ſhort a time as it ſometimes proves fatal; ſeldom in leſs than twelve or fourteen days. Protracted caſes may prove fatal either by the ſymptoms ſuddenly increaſing, or in conſequence of the ſtrength being gradually exhauſted. But in theſe, the ſymptoms being milder than when the diſeaſe is more rapid, the danger is generally leſs. The bowels ſeem ſometimes to

acquire a habit (if the expreſſion may be uſed) of retaining the fæces, and the diſeaſe is protracted even for years, the patient being conſtantly haraſſed with pain, mucous and bloody ſtools, fever and want of appetite, under which he gradually ſinks. In ſuch caſes ſome part of the inteſtines is often ulcerated.

The lower parts of the inteſtines are generally the laſt that recover their tone; the teneſmus often remaining a conſiderable time after all the other ſymptoms have diſappeared. This has been aſcribed to the remains of the morbific matter; but Sir John Pringle ſeems to aſcribe it to the true cauſe, the ſoreneſs of a part which has been ſo much inflamed and excoriated in the courſe of the diſeaſe, and which is ſtill frequently irritated. "That the teneſmus which ſucceeds "dyſentery," he adds, "may be ſometimes owing to an "ulcer, is aſſerted by Morgagni, but he gives only one in-"ſtance of it in his practice."

Various diſeaſes of debility, particularly of the ſtomach and inteſtines, follow dyſentery, eſpecially when long protracted; obſtinate diarrhœa, or lientery, dyſpepſia, pains of the bowels, &c. Degner ſays, that ſome of his patients after recovering from dyſentery had a diſcharge of chyle with the fæces; and others almoſt an inſatiable hunger. I have ſeen a caſe in which permanent ſtricture of the rectum followed long protracted dyſentery, where the irritation from acrid ſtools had been very great. If the patient has been much reduced, dropſical ſymptoms often ſucceed this diſeaſe, which may ſometimes be removed by tonic medicines and a proper attention to diet and exerciſe.

SECT. II.

Of the Appearances on Diſſection.

We generally find the inteſtines inflamed, often more or leſs ſphacelated, and ſometimes ulcerated; they are ſometimes of a dark or even black colour, for a great part of their courſe without either ulceration or gangrene.*

The inflammation ſometimes extends through almoſt the whole track of the inteſtines, and even ſpreads to the ſtomach, which has alſo been found gangrenous.

The coats of the inteſtines are often much thickened, and here and there tender as if half putrid.

The villous coat is frequently abraded, though not ſo often as once ſuppoſed; ſometimes it ſeems quite diſſolved into a greeniſh putrid maſs. When the villous coat is conſumed, the vaſcular generally appears full of turgid veſſels, as if well injected with red wax.

The internal ſurface of the inteſtines is often covered with bloody ſlime of an extremely offenſive ſmell, and ſometimes there is no excrementitious matter, even in the form of ſcybalæ, in any part of them; the digeſtive powers ſeeming to have been wholly ſuſpended for ſome time before death.

The large inteſtines are moſt frequently affected with gangrene and ulceration. Blood is often paſſed in conſiderable quantity when no appearance of ulceration can be found after death; ſo that Sir John Pringle and Zimmer-

* Dr. Baillie's Morbid Anatomy.

man conclude, that in general the blood flows from the debilitated mouths of the veſſels which open on the internal coat of the inteſtines; and the gangrenous ſtate of this coat often extending ſo far along the canal without actual ulceration, favours the opinion.

The inteſtines are often found enlarged, the effect of repeated diſtenſion from air. From this cauſe, together with the flaccidity occaſioned by the tendency to gangrene, the colon in particular has often been ſo much diſtended, that the appearance of its cells, and even of the ligaments which form them, has been almoſt wholly obliterated. The ligaments are ſometimes found in a gangrenous ſtate, and adhering looſely to the outer coat of the inteſtine.

When gangrene has not deſtroyed the texture of the parts, conſtrictions are often found, particularly in the large inteſtines, often of conſiderable extent. Theſe are ſuppoſed by the generality of writers to cauſe dyſentery by retaining the natural fæces, which, by lying in the inteſtine, are formed into hard maſſes, occaſioning much irritation and an increaſed ſecretion of mucus. The relaxation of theſe conſtrictions readily accounts for the highly offenſive and putrid ſtools which are ſo often the forerunner of death.

Sir John Pringle, Dr. Cleghorn, and ſome others, mention the appearance of ſmall flat tubercles in the large inteſtines, which look like the confluent ſmall pox.*

Such are the appearances obſerved in the inteſtines of thoſe who die of dyſentery. Dr. Cleghorn informs us, that in

* Linnæus and Zimmerman also mention this appearance. The writers mentioned in the text think it a very common attendant, particularly on contagious dysentery, and that its not having been more generally mentioned by writers, arises from its being concealed by the blood and mucus, which so frequently besmear the intestines in dysentery. It is unnoticed both by Bonctus and Morgagni.

ſome caſes, the ulcers were not on their internal but external ſurface. In a few, he obſerves, there were ſmall abſceſſes in the cellular membrane of the peritoneum, contiguous to the colon and rectum; the convoluſions of the inteſtines frequently adhering to each other, or to parts in their neighbourhood.

With regard to the other abdominal viſcera, they are often ſound. The meſentery and meſocolon, even when the inteſtines are gangrenous, are ſometimes loaded with fat. The author juſt mentioned obſerves, that in two caſes which he ſaw, the omentum was almoſt entirely waſted, the ſmall remains of it being quite black, and purulent matter was found in the abdomen. The gall bladder is often much diſtended with bile, which is generally of a darker colour than uſual. The liver, ſpleen, pancreas, and kidneys have been found flaccid and enlarged, more rarely, diminiſhed in ſize and indurated. They are ſometimes gangrenous or conſumed with abſceſſes.

The following deſcription affords a ſtriking picture of the effects of this diſeaſe. "Although the body was opened "the next day, the ſmell was intolerable, the inteſtines were "wholly mortified, and the ſtomach partly ſo. The coat "of the liver was putrid, and in its ſubſtance were ſeveral "abſceſſes containing a purulent or ichorous matter; the "ſpleen was likewiſe corrupted."*

There is ſeldom much change to be obſerved in the thoracic viſcera. Sir John Pringle mentions a caſe in which the diaphragm aſcended as high as the third rib, probably from the diſtenſion of the inteſtines, yet the lungs were ſound. In ſome caſes, however, as in one related in the 31ſt Epiſtle of Morgagni, the lungs are found in a

* Sir John Pringle's Observations on the Diseases of the Army.

very diſeaſed ſtate. The blood is generally of a dark colour, and partly coagulated in the ventricles of the heart.

From the above ſtate of the abdominal viſcera,* we have reaſon to believe, that death is generally occaſioned by inflammation of the inteſtines running to gangrene. When the pulſe is frequent and ſmall and the pain ſevere with nauſea and much tenderneſs of the abdomen, we may be aſſured that inflammation has ſupervened.

SECT. III.

Of the Cauſes of Dyſentery.

The ancients were acquainted with dyſentery, but moſt of them uſed the word in a very vague ſenſe; Hippocrates, Galen, and many others, applying it as a general term for all kinds of fluxes or hemorrhagies of the inteſtines; others confining it to expreſs an ulcer of ſome part of the alimentary canal. Sydenham and Willis ſeem to be the firſt who employed the term in the way we now do.

Dyſentery is more a diſeaſe of the warm, than the cold and temperate climates, and moſt frequently appears towards the end of ſummer and in autumn. Huxham is among the few writers who met with an epidemic dyſentery in ſpring. It is moſt apt to make its appearance when the ſummer is unuſually warm and the autumn moiſt; and the cold of winter generally tends to check its progreſs. It has ſometimes, how-

* See Roederer de Morbo Mucoso, p. 155 et seq.

ever, made its appearance, and proved very fatal after moderate heats, and ſometimes it has continued through a great part of the winter.

Weak and exhauſted habits are moſt liable to it. This obſervation is moſt applicable to the worſt forms of dyſentery, which partake ſo much of putrid fever, that Dr. Blane conſiders the diſeaſe as a fever of this kind, the affection of the bowels being only ſymptomatic.

With regard to the occaſional cauſes of dyſentery, many maintain that there is but one, contagion; and that the other occaſional cauſes only favour its operation.

Of contagion in general I have already had occaſion to ſpeak at length; it will only be neceſſary here to make a few obſervations, particularly applicable to the diſeaſe before us. The contagion of this diſeaſe, like that of moſt others, extends but a ſhort way around the ſick. But its chief ſource is the excrement; for the mere ſmell of it, as Zimmerman obſerves, has often communicated the diſeaſe to men in health, and even to beaſts. And it would ſeem, that the more fetid the excrement, the more contagious is the diſeaſe. It may be propagated, the author juſt mentioned thinks, by clothes or furniture which have never been in contact with the ſick, provided they have been expoſed to the effluvia ariſing from the patient's body, and ſtill more to thoſe from the excrement; and as I have had occaſion to obſerve of other diſeaſes, the perſon who wears the infected clothes may eſcape; while the diſeaſe is communicated to thoſe with whom he aſſociates. It is a remark of Sir John Pringle, however, that dyſentery often ſpreads more ſlowly, and is of a leſs infectious nature, than moſt other contagious fevers; ſo that in the milder epidemics, as in that deſcribed by Sydenham and Willis, its contagious nature has paſſed unnoticed. This obſervation by no means applies to the worſt forms of it.

Degner and others mention epidemics not leſs infectious than the plague itſelf. Like many other contagious diſeaſes, dyſentery is ſometimes communicated to the fœtus in utero.

The manner in which dyſentery is propagated points out ſome of the means of checking its progreſs. Public privies are the moſt certain means of ſpreading it. It is not even proper to confine many ſick to the ſame privy, as the conſtant application of the contagion not only renders the diſeaſe more dangerous to the patient himſelf, but to all that are near him. The excrement ſhould be regularly buried. In camps attention ſhould be particularly directed towards detecting the ſick, who uſe every means to conceal a diſorder which excludes them from the comforts of ſociety, and ſeldom betake themſelves to bed till they have infected many of their companions. But for the various means of preventing the ſpreading of the diſeaſe, I muſt refer to the firſt volume.*

If the other cauſes, to which dyſentery has been aſcribed, are not capable of exciting the diſeaſe, independently of contagion, they certainly add to its power; it is therefore of great conſequence to avoid them in endeavouring to check the progreſs of the diſeaſe.

A bad diet ſeems to be a principal cauſe of the greater virulence of dyſentery among the lower ranks. A debili-

* A vomit and gentle cathartic, Zimmerman remarks, seem often to prevent the disease in those who are exposed to its contagion. Those, it has been observed, who eat little, drink less, and do not take their drink cold; who keep up the perspiration, especially during the night, by covering themselves all over with the bed clothes; either escape the disease, or have it slightly. Fatigue, vexation, and fear dispose to dysentery as well as other contagious diseases. There is every reason to believe, that tonic medicines, by strengthening the alimentary canal, tend to prevent this disease. See Sir G. Baker's Treatise, de Dysenteria.

tated habit, however induced, may have the ſame effect. I have had opportunities of pointing out how much the ſeverity of other contagious diſeaſes is increaſed by it.

Another cause of its frequency among the lower ranks, is their keeping their perſons and houſes dirty. Zimmerman even goes ſo far as to attribute to this cauſe alone the contagious nature of dyſentery. For on its firſt appearance he remarks, as it attacked many at the ſame time, it ſeemed to proceed from a cauſe which acted more generally than contagion could be ſuppoſed to do, and ſeemed only to become infectious in proportion as cleanlineſs was diſregarded.

Many have been led wholly to aſcribe dyſentery to certain ſtates of the bile, from the ſtools being frequently bilious; from an unuſual quantity of bile being often found in the inteſtines and gall bladder of thoſe who die of it, and that generally of a dark colour, implying a vitiated ſtate of this fluid; and from dyſentery prevailing moſt in thoſe countries where bilious affections are moſt common. No particular ſtate of the bile, however, ſeems connected with the diſeaſe; and in cholera and other diſeaſes we ſee the bile variously changed in quantity as well as quality without inducing it. By others it has been aſcribed to other kinds of acrid matter in the inteſtines. But there ſeems in many caſes no evidence of any acrid matter till the diſeaſe itſelf has produced it. Irritation of the inteſtines, however, kept up by bile, worms,* flatulence, acid, &c. may terminate in dyſentery; and that ſuch cauſes are favourable to the operation of its contagion, and tend to increaſe its virulence, every day's experience evinces.

Almoſt every writer on the diſeaſes of the army informs

* See Dr. Huxham's Account of the Epidemics of 1743.

us, that lying in the fields and doing duty in all kinds of weather are peculiarly favourable to the appearance of this diſeaſe. Here, as in other inſtances, cold is moſt pernicious when it alternates with heat, which is probably one of the cauſes of the unwholeſomeneſs of warm moiſt weather, the vapour exhaled during the day being condenſed, occaſions damp and chillineſs in the evening. Hence it ſeems to be, that dyſentery often rages at the ſame time with remitting and intermitting fevers, and that theſe diſeaſes are frequently combined.*

Whatever ſhare putrid effluvia may have in the firſt production of the diſeaſe, they never fail to increaſe its violence, and render it more infectious. Dr. Donald Monro, whoſe experience was very extenſive, wholly attributes its production to obſtructed perſpiration and expoſure to putrid effluvia.

It is very doubtful whether (as Zimmerman ſeems to ſuppoſe, and as the great effect of the excrement in propagating the diſeaſe has induced many to believe) dyſentery, like common typhus, may ariſe from putrid effluvia alone. The conſtant affection of the bowels muſt incline us to believe that there is ſomething ſpecific in its contagion. It was obſerved in treating of contagion, that we have reaſon to believe that contagious diſeaſes are at firſt produced by a concurrence of ſeveral cauſes. Thus we find, that a very ſimple concurrence of cauſes is ſufficient to occaſion typhus, which afterwards ſpreads by its own contagion. It ſeems probable from many obſervations, that taking cold, a diet of difficult digeſtion, irritation from bile, &c. which would in ordinary circumſtances occaſion diarrhœa, may, when the patient is expoſed to putrid effluvia, produce dyſentery.

I have had occaſion to obſerve of the plague, typhus, and

* See the observations of Sir John Pringle, Dr. Donald Monro, &c.

ſome other contagious fevers, that few other diſeaſes appear, while they are prevalent, and thoſe which do, partake of their nature. The ſame obſervations have been made reſpecting dyſentery. While the dyſentery raged, Degner obſerves, there was hardly any other diſeaſe to be met with except diarrhœa and one or two caſes of ſmall-pox. I knew very few, he adds, that during this time were confined to bed by any other diſeaſe but the dyſentery. Moſt writers on this diſeaſe make ſimilar obſervations. Intermitting and remitting fevers, in particular, are apt to partake of dyſentery. Analogous to this obſervation is that of Sydenham, that the epidemics of the ſame year bear ſome reſemblance to each other. We find that the worſt kinds of dyſentery, in which the fever is typhus and the ſtools very fetid, are often preceded or followed by putrid fevers.

SECT. IV.

Of the Treatment of Dysentery.

The treatment of dyſentery, Dr. Cullen obſerves, for want of a proper view of the nature of the diſeaſe, ſeems to have been in ſeveral reſpects fluctuating and undetermined. He therefore explains what he conceives its nature to be. Although Dr. Cullen's opinion of its depending wholly on a preternatural conſtriction of the inteſtines, is far from being eſtabliſhed, it may be regarded as the moſt probable; and as it ſerves to connect the different parts of the treatment, it may be uſeful to keep it in view. It does not, however, lead, a priori,

to the whole of the treatment which has been found moſt ſucceſsful; and might even ſuggeſt an early and free uſe of opiates and other modes of practice, which are found to be hurtful. We cannot, therefore, agree with Dr. Cullen, in regarding the removal of the ſuppoſed conſtriction of the inteſtines as the indication on which the whole treatment reſts.

Sir John Pringle and many other of the beſt writers ſeem to have regarded our knowledge of this diſeaſe, as too confined to admit of our laying down indications of cure. But although we are not warranted, perhaps, to lay down any, implying a knowledge of its proximate cauſe, it does not ſeem difficult, by attending to the effects of the means found beneficial, to form ſuch as may be very uſeful in conducting the treatment. A review of theſe means ſeems to lead to two indications, which comprehend the whole of the treatment: to procure the evacuation of the natural fæces; and when this indication is anſwered, to reſtore tone to the bowels.

The former is anſwered by preventing or removing irritation and other cauſes which impede the action of the bowels or render it ineffectual in expelling the fæces; and by increaſing the action of the ſtomach and bowels by cathartics. The circumſtances which, beſides irritation, tend to prevent the relaxation of the bowels, ſeem reducible to the two heads of increaſed excitement and debility.

It is of the firſt importance in this diſeaſe, that every thing which tends to irritate the ſtomach and bowels ſhould be avoided; the diet, therefore, ought, with the exceptions afterwards to be pointed out, to be of the mildeſt kind; and we muſt, at the ſame time, as far as we can, expel the morbid contents of the primæ viæ, and allay or prevent the irritation occaſioned by thoſe which we cannot remove; for whether

irritating matter in the primæ viæ has occaſioned dyſentery or not, it always attends it.

The uſe of emetics is chiefly confined to the early periods. They are particularly indicated when the ſtomach is loaded, eſpecially, if, at the ſame time, the excitement is conſiderable, with a dry parched ſkin. At the commencement, the excitement is ſeldom ſo low as to counterindicate them. Their effect is not merely that of emptying the ſtomach and preventing the introduction of irritating matter into the inteſtines; they determine to the ſkin, thus tending both to allay the fever and relax the bowels. When the ſtomach is much loaded, emetics are often employed with advantage as late as the tenth, twelfth, or fourteenth day. As might be inferred, a priori, from the purpoſes which they ſeem to ſerve in this diſeaſe, their frequent repetition is ſeldom proper, and often does harm.* The antimonium tartariſatum and ipecacuanha are the beſt emetics in this diſeaſe. They ſhould be given in ſmall and repeated doſes, that they may partly paſs the pylorus before exciting vomiting, unleſs the ſymptoms of oppreſſed ſtomach are urgent. The preparation of antimony, termed the vitrum antimonii ceratum, has been celebrated as an emetic in dyſentery, but is now, on account of the roughneſs and uncertainty of its operation, very generally laid aſide.

To render cathartics effectual, we muſt, as far as we can, remove the different cauſes juſt mentioned, impeding their operation in this diſeaſe.

* For the use of emetics in dysentery the reader may consult the works of the different authors I have had occasion to mention, particularly those of Sir J. Pringle, Dr. Cleghorn, Dr. D. Monro, Dr. Cullen, and Dr. Zimmerman, of whose work a translation from the German is given by Dr. Hopson.

If after the operation of the emetic there is reaſon to believe that the ſtomach is ſtill oppreſſed, we muſt endeavour to correct the offending cauſe. When the breath and eructations are ſour, antacids are neceſſary; when there is reaſon to ſuſpect a prevalence of bile, acids, particularly the vegetable acids, muſt be employed.

The only means we poſſeſs, if we except opiates, of defending the ſtomach and inteſtines againſt irritation, are, mucilaginous and oily demulſions. The latter ſeem to be the moſt effectual, but they are moſt apt to oppreſs the ſtomach. They are better adapted to clyſters. In preparing oily clyſters, the oil ſhould be rubbed with a ſufficient quantity of mucilage to make it mix readily with the milk, of which the remaining part of the clyſter ſhould be compoſed. Theſe means relieve the pain and teneſmus, and ſeem to act partly by lining the internal coat of the inteſtines, and thus defending them againſt the acrimony of their contents, and partly as a warm bath, by their bulk, warmth, and blandneſs, ſoftening and relaxing the bowels.

When, notwithſtanding theſe means, the irritation and griping are ſevere, we muſt call in the aid of external applications, particularly the warm bath, fomentations and bliſters. The firſt is ſtrongly recommended by Sir George Baker. When the general warm bath is inconvenient, the ſemicupium is often uſed with advantage. Fomentations of the abdomen, and flannel dipped in brandy and ſprinkled with pepper applied to it, are alſo frequently ſerviceable. A large bliſter applied over the abdomen is more effectual than any of theſe means; but in the milder caſes ſo ſevere a remedy is unneceſſary.

Concerning the exhibition of opiates in this diſeaſe, there has been much difference of opinion. But there are few writers on dyſentery who do not warn againſt the early uſe

of them.* After a free evacuation by cathartics, opiates are often of great ſervice, eſpecially in the evening, for the purpoſe of procuring ſleep, and they are the more beneficial at this time, as the pain is generally moſt ſevere in the night. It has been obſerved, indeed, that if opium allays the local ſymptoms, it occaſions a proportional increaſe of the febrile. But the latter effect is ſeldom conſiderable, unleſs it be exhibited before a proper relaxation of the bowels, or while the excitement is great.

At whatever period of the diſeaſe it is given, its tendency to conſtipate muſt be carefully obviated. Some have propoſed combining a cathartic with the opiate, expecting that while the cathartic obviates the conſtipating effect of the opium, it may counteract the irritating quality of the cathartic. This plan, however, has not been ſo ſucceſsful as might have been expected. It has been found better to give the cathartic alone, and the opiate after its operation. Nauſeating doſes of emetics indeed, of which I ſhall preſently have occaſion to ſpeak more particularly, are often advan-

* I have always looked upon it, says Zimmerman, as dangerous to give opium in dysentery, before the fuel which feeds the disease is burnt out. "Si astringentia et opiata præpropere dantur "(Huxham observes) mox gravissime accedunt tormina, stomachi "ægritudo, singultus, aphthæ, tandemque intestinorum sphacelus, "quem cito mors excipit." Lieutaud, Dr. Blane, Sir John Pringle, and many others might be quoted to the same purpose. Even Dr. Cullen, whose opinion of the disease seems to point out opium as the principal remedy, observes, that by occasioning an interruption of the action of the small intestines, it favours the constriction of the colon, and thereby sometimes aggravates the disease, and that if the use of it supersede the employment of purgatives, it commonly does much mischief. I believe, indeed, he adds, that it is only the neglect of purging that renders the use of opiates necessary.

tageouſly combined with opium. By this combination, however, we have it leſs in view to move the bowels than to take off the tendency to ſpaſm and promote perſpiration.*

The hyoſciamus has not, as far as I know, been recommended in dyſentery, although its anodyne and gently laxative qualities ſeem eminently to adapt it to this diſeaſe. I have employed it with advantage in cholic, in which it is recommended by Dr. Cullen.

Opiates are often given with great advantage, in clyſters, in this diſeaſe. The intolerable irritation in the rectum naturally ſuggeſts them. When the motions were ſo frequent that mere emollient clyſters could not be retained, Sir John Pringle generally added from 20 to 60 drops of laudanum to each, or more if it was neceſſary, provided it did not affect the head.

Mr. John Hunter, (the author juſt mentioned, informs us) often uſed antiſeptic anodyne clyſters with the beſt effects. He made the firſt trial with four ounces of a ſtrong decoction of bark, with ſome grains of opium diſſolved in it. He afterwards uſed with ſucceſs a decoction of the tormentil root and of oak bark in the ſame way. The clyſters were repeated if returned without allaying the teneſmus.

Some medicines are warmly recommended as means of allaying the griping, the operation of which it is not ſo eaſy to explain, unleſs we allow that their bulk, warmth, and gently tonic power may have the effect. Among the chief of theſe are lime water and an infuſion of camomile flowers.† Other ſimilar infuſions are recommended for the

* See the obſervations of Dr. D. Monro, and Dr. Brocklesby.

† Dr. D. Monro gave the lime water mixed with milk, which proved ſerviceable to ſome; in other cases it failed. The infuſion of camomile flowers ſeems preferable to lime water. Sir John Pringle ſays, that for mitigating the gripes and expelling wind, he has found

ſame purpoſe. We have reaſon to believe, that the warm water is the chief part of the remedy. It is almoſt always beneficial, and ſome have truſted to it alone, and it is ſaid with great ſucceſs.*

For the purpoſe of allaying irritation in dyſentery, there are few means more powerful than the horizontal poſture. I have known caſes yield in this poſture which had reſiſted every remedy, while the patient was allowed to ſit up.

When the excitement runs high, it is difficult effectually to move the bowels in this diſeaſe. The ſame means which fail during increaſed excitement, often ſucceed when it has been reduced. To allay it, therefore, is, both on this account, and becauſe nothing tends more to debilitate, an indication of great importance in the commencement of dyſentery.

The means of allaying irritation juſt conſidered, form an eſſential part of thoſe of reducing excitement; but it is often neceſſary to have recourſe to more active meaſures. It is to be recollected, however, that leſs is to be feared in this diſeaſe from an exceſs, than from a deficiency of excitement; the more powerful means of reducing it, therefore, muſt be uſed with caution.

Emetics and cathartics are employed for other purpoſes; the ſame may be ſaid of diaphoretics; blood-letting, therefore, is the only evacuation recommended wholly with a view to leſſen excitement.

nothing equal to fomentations and drinking camomile tea. And Zimmerman obſerves, that next to opium he found the infuſion of camomile flowers the best means of alleviating the pains. Dr. Monro and others make similar obſervations.

* See the obſervations of Zimmerman, and Sir J. Pringle; also, those of Huxham, Degner, Tissot, &c.

Many ſpeak of blood-letting as neceſſary at the commencement of dyſentery, as proper if all the remaining ſtrength of the patient will bear it.* They ſeem to expect from it ſome eſſential change in the ſtate of the local affection. If inflammation of the bowels always attended the commencement of dyſentery, this expectation would be juſt. But when inflammation does attend dyſentery, it is the conſequence, not the cauſe of the diſeaſe, and ſeldom ſupervenes early. Beſides, the authors juſt alluded to mention ſymptoms as warranting the employment of blood-letting, which do not indicate the preſence of inflammation.

Inflammation of the inteſtines is known here, as in other caſes, by the great ſeverity of the pain, and tenderneſs of the abdomen, and by a frequent, ſmall, feeble pulſe, more or leſs hard. † In the laſt ſtage of dyſentery, enteritis is often unaccompanied with its uſual ſymptoms, and in many caſes the tendency to gangrene is ſo great, that it ſupervenes on a degree of inflammation too ſlight materially to affect the ſtate of the ſymptoms. I had occaſion to explain in the introduction to this volume, why, in very debilitated ſtates of the ſyſtem, gangrene often ſupervenes on ſlight degrees of inflammation, the inflammation then bearing the ſame analogy to paſſive hemorrhagy, which inflammation, with a

* Akenside De Dysenteria Commentarius, Lieutaud's Synopsis, &c.

† "Nor were we discouraged," Dr. D. Monro observes, "from "bleeding in the beginning by the low, quick pulse, which often "attended the disorder; and we frequently found the pulse rise "as the blood flowed from the vein. But when the sick were "low and weak, without much pain or fever, and the pulse was "soft, we were more sparing of the vital fluid." Why, it may be asked, was blood-letting recommended in the latter case?

ſtrong vis a tergo, bears to active hemorrhagy. In ſuch caſes, it is evident, that blood-letting would only add to the evil.

It would ſeem that when there is no inflammation, the propriety of blood letting is aſcertained in the ſame way as in ſimple fever, by the degree of excitement; we muſt recollect, however, that in proportion as the due action of the bowels is obtained with greater difficulty in dyſentery, a leſs degree of excitement warrants its employment.

It frequently happens in this diſeaſe, that the abdomen, or particular parts of it become very tender, the patient complaining of the ſlighteſt preſſure, without the other ſymptoms of enteritis. Local blood-letting, as I have often witneſſed, is then attended with the beſt effects.

With regard to the employment of refrigerants as a means of leſſening excitement, there is little to be added here to what I have frequently had occaſion to ſay. Nitrate of potaſh, given in any conſiderable quantity, is apt to irritate the bowels. Saline draughts, in the ſtate of effervescence, and acetate of ammonia, are perhaps the beſt of this claſs of medicines in dyſentery. Their good effects in this diſeaſe are to be aſcribed, perhaps, more to their diaphoretic than refrigerant quality.

When the indication is to leſſen excitement, the diet muſt be ſuch as ſhall co-operate with the foregoing means, mild and diluent. Independently of increaſed excitement, indeed, this diet ſeems particularly indicated by the ſtate of the bowels in dyſentery.* The drink ſhould always be tepid.

Such are the means of moderating excitement in dyſentery; but the morbid ſtate of the bowels is leſs frequently ſupported by increaſed excitement than by debility, the

* See the observations of Sir J. Pringle, Zimmerman, Huxham, Degner, &c.

means of preventing and removing which form an eſſential part of the treatment of this diſeaſe. The debility, we found, is ſometimes conſiderable from the commencement. In general, however, this is only the caſe in the more advanced ſtages.

Our view is to ſupport the ſtrength with as little irritation as poſſible. I have already had occaſion to obſerve, that the diet in dyſentery ſhould be mucilaginous and diluent. When debility prevails it muſt be nutricious. A full diet of animal food is too irritating, and too low a diet may induce a fatal debility. It muſt be adapted to the ſtate of the ſymptoms, the patient's habit, the nature of the epidemic, and the duration of the diſeaſe.

In all caſes, perhaps, which have not been of long duration, the mildeſt diet is proper. The patient ſhould be confined to gruel, ſago, panada, &c. the quantity being regulated by the appetite. Sir George Baker and many others even forbid the uſe of chicken broth at the commencement.

Where the fever is ſlight, and there is reaſon to dread much debility, Dr. Akenſide recommends not only different kinds of broths, but the milder kinds of animal food in a ſolid form. Few practitioners, however, admit of ſo full a diet. Sir John Pringle ſays, that he formerly uſed to permit dyſenteric patients to take a little mutton broth, but finding even this hurtful he has ſince forbidden it. Dr. Cleghorn, Dr. D. Monro, Dr. Zimmerman, &c. make ſimilar obſervations; were I to ſpeak from my own experience, I ſhould ſay, that it is only in thoſe caſes of dyſentery which are ſo protracted as to aſſume the chronic form, that any kind of animal food is proper, and in theſe the mildeſt only ſhould be uſed.

Fruit has frequently been regarded as a cauſe of dyſentery, and conſequently avoided in this diſeaſe, not, however,

it would appear on ſufficient grounds. Zimmerman obſerves, that grapes were an excellent remedy in the epidemic dyſentery. Sir George Baker ſays, that thoſe who had taken an unuſual quantity of the ſummer or autumnal fruits either wholly eſcaped the dyſentery, or had it in a very mild form. Dr. Cullen thinks the uſe of fruits ſhould be chiefly confined to the beginning of the diſeaſe. It is only, he obſerves, in the more advanced ſtages that the morbid acidity of the ſtomach ſeems to prevail, and requires ſome reſerve in the uſe of aceſſants. Fruit is particularly indicated when there is much bile in the primæ viæ.

Of the uſe of wine in dyſentery, I ſhall preſently have occaſion to ſpeak.

With reſpect to tonic medicines the tendency of this diſeaſe to inflammation has deterred many from employing them at any period, and at an early period they are generally hurtful, even where the debility is conſiderable. When dyſentery, however, has been of long ſtanding and has occaſioned much debility, or is complicated with typhus or with intermitting fever, the bark ſeems often to have proved eminently uſeful. Sir John Pringle recommends it with the ſerpentaria, when the fever is of a malignant nature.* Lautter, in his Hiſtoria Med. Bien. obſerves, that when the

* "In 1760," he obſerves, "Dr. Whytt wrote to me, that in "this bad ſtate of the dysentery, when the mouth and alimentary "canal were threatened with apththa, and even ſometimes after "they had appeared, he had ſucceſſfully given the bark, having "firſt made ſuch evacuations as the caſe required or the patient's "ſtrength could bear, by blood-letting, vomiting with ipecacuanha, "and purging with rhubarb. That to a pint of a ſtrong decoction "of the bark he added three drams or half an ounce of confectio ja-"ponica, and ordered two ſpoonfuls every four hours of this medi-"cine without any other, except ſome laudanum at bed time. That "when by the continued uſe thereof the body became coſtive, he

fever remitted, the urine depoſiting a lateritiious ſediment, however irregularly and however ſhort the remiſſions, he immediately had recourſe to the bark, which he gave in ſubſtance. Scarcely, he obſerves, had the patient taken half an ounce when the ſtools became leſs frequent, the griping was allayed, the teneſmus, which formerly baffled all means which could be employed, almoſt wholly ceaſed, and the pulſe at length loſt its unuſual frequency. Dr. Cullen, Dr. Cleghorn, and many others, make ſimilar obſervations.*

Under whatever circumſtances the bark is given, if it occaſions heat and reſtleſſneſs, it will generally be found to do harm.

In all the foregoing caſes it is frequently neceſſary to combine it with mucilage and opium, to prevent its irritating effects, eſpecially when in the decline of the diſeaſe it renders the diarrhœa profuſe.

The conneſſi † and caſcarilla barks ‡ have been celebrated

" then gave rhubarb, and after that, went on with the decoction " of the bark, but with less of the confection, or even without it."

* " The great similitude," Dr. Cleghorn observes, " which there " is in many respects between tertian fevers and dysenteries, induced " me frequently to make use of the bark in the last named disease. " When the fever and gripes were regularly exasperated, either " every day or every other day, at stated periods, it has often effec- " tually put a stop to both, especially if the exacerbation began with " chilliness and terminated with sweats; at other times it removed " the fever, the flux continuing without much alteration." He adds, " In some cases I have given the bark, merely with a view to prevent " the mortification of the intestines in the last stage of the distemper, " but I am sorry to say it was seldom so successful as I could have " wished."

† See the Observations of Dr. Brocklesby, and the Edinburgh Medical Essays, vol. iii, article 4.

‡ See the Memoirs de l'Academie des Sciences, a Paris, 1719, and Dr. D. Monro's Observations on the Diseases of the Army.

in dyſentery. The latter is generally preferred to the Peruvian bark by the phyſicians of this country, but like other tonics, it ſeems by no means adapted to the earlier ſtages, as ſome have alledged.

When the debility is conſiderable, particularly in the advanced ſtages, wine has been ſtrongly recommended. Dr. Brocklesby ſometimes allowed his dyſenteric patients a pint and a half of Port wine, or even more, every twenty-four hours. He diluted the wine with water, and generally gave aromatics along with it. Dr. Monro ſays he often found the wine increaſe the griping; when this happened, he ordered brandy, properly diluted with barley or rice-water.

Some object to the early uſe of Port wine, on account of its aſtringency; and Zimmerman and others to the uſe of all kinds of wine and diſtilled ſpirits at every period of the diſeaſe. Aromatics and wine, this author obſerves, excite a dangerous irritation in the bowels, increaſing the pain, fever, and ſtrangury.

It is probable, from comparing what Zimmerman ſays of theſe remedies with what is ſaid of them by others, that he did not diſtinguiſh with ſufficient care the caſes in which they ſhould be employed. If there be any conſiderable tendency to inflammation, and ſtill more if the excitement is above the healthy degree, they will do harm. And even where neither the excitement nor tendency to inflammation is great, if the bowels are irritable, wine muſt be given with a large proportion of mucilage and other ſubſtances, which blunt its pungency. It is to be obſerved, on the other hand, that the patients of Dr. Brocklesby and Dr. Monro being ſoldiers, and conſequently accuſtomed to the uſe of fermented liquors, would require them more and bear them better than others.

The reſult of general experience ſeems to be, that when

debility has ſupervened, and no tendency to inflammation appears, the moderate uſe of wine is proper, that it ſhould be given more or leſs diluted and with mucilage, to prevent as much as poſſible its irritating effects on the bowels. With regard to diſtilled ſpirits, they ſeem only admiſſible when from the ſtate of the ſtomach wine cannot be uſed, either being rejected by vomiting, or running into the acetous fermentation.

With regard to aromatics, many have condemned them in all caſes. From their tonic, bearing a ſmall proportion to their irritating, effect, they ſeem ill-adapted to dyſentery.

Few recommend iron in any form of this diſeaſe. In chronic caſes it is ſaid that zinc has ſometimes been uſeful.

Mercury has been much extolled in dyſentery. Of the uſe of calomel, as a cathartic, I ſhall preſently have occaſion to ſpeak. In the dyſentery of this country, the conſtitutional uſe of mercury is generally found injurious. There is a ſpecies of dyſentery prevalent in tropical climates, ariſing from an hepatic effection, in which it is eſſential.*

The moſt important part of the means of fulfilling the firſt indication in dyſentery, remains to be conſidered, the employment of cathartics. Theſe are indicated at all periods of the diſeaſe, and all the other means, which have been mentioned, may be regarded as uſeful only as far as they conduce to their more certain, mild, and ſafe operation.

There has been much difference of opinion concerning the cathartics beſt ſuited to this diſeaſe. Dr. Cullen juſtly obſerves, that as the cathartics muſt frequently be repeated, the moſt gentle are the ſafeſt, particularly on account of the tendency to enteritis.

* See the Observ. of Dr. Girdlestone and others.

There is no cathartic which has been ſo generally recommended in dyſentery as rhubarb, although in ſeveral reſpects perhaps it is among the moſt improper. Both Dr. Cullen and Sir George Baker are of this opinion. It operates, the latter obſerves, ſlowly and weakly, and almoſt always with an increaſe of the griping and inflation of the bowels. Sir John Pringle propoſes combining calomel with the rhubarb, by which, he obſerves, the operation of the latter is rendered eaſy. Sir George Baker remarks, that this combination will generally be found to anſwer the worſe, the greater the proportion of rhubarb. Degner recommends the rhubarb in tincture taken in ſome watery fluid, which ſeems even more exceptionable than the powder.

Calomel has been much extolled, but it ought never perhaps to be given alone, its operation is always rendered both more certain and more eaſy by combining it with other cathartics. In many, particularly when taken alone, it occaſions teneſmus, and I have repeatedly ſeen it induce a temporary dyſentery. It is when this diſeaſe is the conſequence of, or at leaſt complicated with, bilious effections, that calomel is moſt ſerviceable.

A diluted infuſion of ſena with manna, in order to diminiſh as much as poſſible its griping tendency, or a combination of Glauber or Epſom ſalt, with manna which has been much celebrated, eſpecially by the army phyſicians, ſeem for general uſe preferable to any of the foregoing cathartics. Some have added oil to the cathartics, for the purpoſe of allaying irritation. Mucilage is perhaps preferable, as leſs apt to oppreſs the ſtomach. The oil has the advantage of being cathartic, and the greater the number of cathartics we combine, the more certain and eaſy in general is their operation. Caſtor oil has had many advocates, but it frequently occaſions irritation and griping. The ſuper-

tartrate of potaſh has been much uſed in dyſentery. Zimmerman gave it with tamarinds. The latter he conſiders an admirable medicine in this diſeaſe, particularly when the ſtools are bilious.

But from the tendency to preternatural contraction in the inteſtines in dyſentery, no cathartic occaſions a free diſcharge from them, which does not correct this tendency; hence it appears to be, that of all cathartics ipecacuanha, given in ſmall doſes to prevent its emetic effect, is the moſt ſucceſsful. Piſo was the firſt who recommended it in dyſentery; and it is now by many regarded as a ſpecific in this diſeaſe. I have been long in the habit of uſing it, and it appears to me to deſerve all the encomiums beſtowed on it. Its good effects probably, in part at leaſt, depend on the relaxation it induces on the ſkin, which is always accompanied with a tendency to ſimilar relaxation in the alimentary canal. After the excitement is reduced and the fæces begin to be diſcharged, I have found a combination of ipecacuanha and opium, increaſing or leſſening the doſe of the one or the other, according as the conſtipation or pain is moſt urgent, an invaluable medicine in dyſentery, particularly in tedious caſes.

The antimonium tartariſatum has alſo been recommended, and is regarded by many as equal to ipecacuanha.* Where

* "M. de Sanac added," Sir J. Pringle obſerves "that after "having tried ſeveral other methods without having been ſatisfied "with any of them, he had at laſt fallen upon one which had an-"ſwered to his wiſh, and by which he had made numberless cures. "This, after evacuations by bleeding and by a vomit of emetic "tartar, consisted chiefly of one grain of emetic tartar dissolved in "a pint of common whey or chicken water, given every day for "all food, drink, and medicine, till the patient recovered. His in-"tention was to keep a free passage from the stomach to the rec-

the inflammatory tendency and the excitement are considerable, it is an excellent remedy, but seems upon the whole much inferior to the latter in relieving that peculiar state of the bowels, which appears to constitute the disease. The proper dose of these medicines is such as produces some degree of nausea without vomiting, and it should be repeated when the nausea abates.

I have already had occasion to make some observations on the use of clysters; they are useful, by tending to allay the pain and irritation, particularly about the rectum, and promoting the operation of cathartics; we should not, however, by making them of a cathartic nature, endeavour to supersede the necessity of cathartics by the stomach; given with this view they will generally fail, and if their composition is irritating may increase the disease.

Although we have procured an evacuation of the fæces, and consequently a remission, the patient is not to be regarded secure. If the medicines are suddenly laid aside, the dysenteric symptoms generally return, and very frequently prove more obstinate than at first. Their dose, therefore, should be gradually lessened, and the patient should be particularly cautious in abandoning the mild and mucilaginous diet, so peculiarly adapted to this disease.

The means of answering the last indication, to restore tone to the bowels, are more simple than those we have been considering.

Dysentery, we have seen, frequently terminates in diarrhœa, and though this symptom is one of the most favourable, it may go so far as to produce a dangerous degree of debi-

"tum by the mildest laxative, which he found was best answered "by that minute quantity of the antimonial."

lity, particularly after a ſevere diſeaſe. When it is conſiderable, it muſt be allayed by gentle anodynes. If theſe fail, and particularly if at the ſame time the powers of the ſtomach are much weakened, it is often proper to have recourſe to aſtringent medicines. Small doſes of kino or extract of logwood may be employed. From what has been ſaid of the nature of dyſentery, the reader will readily perceive that theſe muſt be uſed with caution.

I have referred aſtringents to this place, notwithſtanding their having been frequently recommended with a view to remove the dyſenteric ſymptoms, becauſe if we except the tonic medicines above-mentioned, ſome of which are aſtringent, given in the caſes which have been pointed out, there is hardly any medicine of this kind, which ſeems to have been beneficial while the dyſenteric ſtate of the inteſtines continued, and they generally, as I have often witneſſed, do harm.* There ſeems to be but one caſe in which mere

* If astringents were useful, says Dr. Huck, (Sir John Pringle on the Diseases of the Army, p. 266) it was only when a laxity of the bowels remained after the disease. The old physicians, Zimmerman observes, so far agreed in the cure of the dysentery, that instead of trying to evacuate the matter, they chose rather to retain it, by incrassating and astringent remedies. Such notions, he continues, as are the produce of ignorance and folly, are not easily eradicated, Huxham remarks, that if astringents be given too early, the worst symptoms follow. Dr. Cullen and most of the best modern writers on dysentery might be quoted to the same purpose.

The simaruba, which is a very gentle astringent if it at all deserve the name, has been regarded as a valuable specific in dysentery. It is the bark of an unknown tree brought from Guiana in South America, where it has been long celebrated for the cure of this disease. It was brought into Europe about the middle of the last century, and is said to have cured dysenteries which had resisted every other means. It is given in the dose of from half an ounce to an ounce of the decoction. Degner informs us, that he used this medicine with success after pro-

aſtringents are proper while this ſtate continues, where there is a copious diſcharge of blood; to check which, vitriolic acid and alum, and if the hemorrhagy is of the paſſive kind the bark, are the beſt.

Abſorbents alſo are chiefly recommended in the decline of the diſeaſe, as acidity prevails moſt at this period. With theſe, as well as the aſtringents, opium is often combined with great advantage, when the diarrhœa is conſiderable and attended with griping.

It is not uncommon for ſome time, for ſlight but very troubleſome renewals of the griping, teneſmus, and even mucous ſtools, to take place. In theſe caſes ſmall doſes of

per evacuations. It acts mildly, he obſerves, and almost insensibly, and produces its effects more certainly in the bloody than in the bilious discharges. He thought that its efficacy was increased by the addition of the cascarilla. Sir John Pringle made a few trials of the simaruba, which were in its favour; but he observes, that he only found it useful towards the decline of the disease. It seems to have been particularly useful when nothing but a diarrhœa remained, and at other times when the quantity of blood passed was very great. "In protracted cases," Dr. Brocklesby observes, "I tried the simaruba, to "the quantity of thirteen grains in powder, or a dram in decoction, "every six hours; and I really think it justly merits a place in a mi-"litary materia medica, to be used only second to the bark in the flux, "whilst yet a slight feverish indisposition of the remitting kind con-"tinues to harass the patient. Nor did I pass over, altogether unno-"ticed or unessayed in such cases, the celebrated Tilicherry bark, now "and then brought to Europe from the coasts of Malabar, and there "said to be a sovereign remedy in slow fevers and fluxes. But I did "not find it answer here better than other bitter aromatics, tending, "in common with all that class, to strengthen and restore the "tone of the solids, especially those of the primæ viæ. But it proved "too narcotic to be used as freely as the simaruba, and I found it oc-"casion in one patient the spasmus cynicus when given to the amount "of two drams in 24 hours.

ipecacuanha with opiates, and a ſaline cathartic once in two or three days, are generally effectual.

For ſtrengthening the ſtomach and bowels, friction of the abdomen is often of great uſe. The various ſtomachic medicines are indicated if the digeſtion is left impaired. The more heating muſt be uſed with caution; the Briſtol waters have been celebrated for the ſame purpoſe, but have loſt much of their reputation.

For ſome time after the diſeaſe the patient ſhould wear flannel next the ſkin, paſs a good deal of time in the horizontal poſture, if he is too weak to walk, ride on horſeback or in a carriage, according to his ſtrength, and carefully avoid taking cold.

When there is reaſon to ſuſpect that the diſeaſe has left an ulcer of the inteſtines, balſams, particularly the balſamum chiæ or copaivæ, rubbed with oils, have been employed, though ſeldom with ſucceſs.* I had occaſion to make ſome obſervations on ulcers of the inteſtines in ſpeaking of enteritis.

For removing the teneſmus, which ſo frequently remains after the other ſymptoms, ſmall mucilaginous and anodyne clyſters, with occaſional gentle cathartics to evacuate any irritating matter that may ſtill be lodged in the alimentary canal, are the beſt means.

* See Dr. Monro's Obs. on the Dis. of the Army, and Dr. Mead's Monita et Præcept. Med. cum Notis Wintringhami, vol. i.

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WITH THE EDITIONS,

REFERRED TO IN THE FOREGOING WORK.

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APPENDIX.

SYSTEMA NOSOLOGICUM MORBORUM FEBRILIUM.

CLASSIS I.*

FEBRES IDIOPATHICÆ.

PRÆGRESSIS languore, laſſitudine, et aliis debilitatis, ſignis; pulſus frequens, calor auctus, ſine morbo locali primario.†

ORDO I.

Febres Intermittentes et Remittentes.

Febres idiopathicæ miaſmate paludum ortæ, paroxyſmis pluribus, intermiſſione, ſaltem remiſſione evidente, interpoſita, cum exacerbatione notabili, et plerumque cum horrore redeuntibus, conſtantes.

Exacerbantes.
Continuæ.
Continuæ periodicæ.
Continuæ remittentes.
Proportionatæ.
Continentes.

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* I have in the foregoing work pointed out the alterations I would propose in the definitions and arrangement of Dr. Cullen's Nosology of Febrile Diseases; it is here offered to the reader with those alterations and some others of less consequence.

† Vol. . p. 10, 11, 12.

GENUS I. QUOTIDIANA.

Paroxyſmi ſimiles intervallo viginti quatuor circiter horarum paroxyſmis maintinis.

1. Interposita intermissione.

Variat,

A. Paroxysmi duratione.

a. Quotidiana cum paroxysmis haud ultra horas duodecem extensis.
Quotidiana legitima.

b. Quotidiana cum paroxysmis ultra horas duodecem extensis.
Quotidiana notha.

B. Paroxysmi recursu.

a. Quotidiana paroxysmo uno quotidie.
Quotidiana simplex

b. Paroxysmis binis quotidie.
Quotidiana duplicata.* Burserii. Inst. Med. Pract.

2. Interposita remissione tantum.
Amphimerina.
Quotidiana continua.
Quotidiana remittens.

GENUS II. TERTIANA.

Paroxyſmi ſimiles intervallo quadraginta octo circiter horarum: accesſionibus meridianis.

I. Tertiana Regularis.†

1. Interposita intermissione.

Variat,

A. Paroxysmi duratione.

a. Tertiana cum paroxysmis haud ultra horas duodecem extensis.
Tertiana legitima.
Tertiana vera.

b. Tertiana cum paroxysmis ultra horas duodecem extensis.
Tertiana notha vel spuria.

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* Vol. i. p. 52, 53. † Vol. i. p. 53. et seq.

B. Paroxysmi recursu.*

a. Tertiana cum paroxysmis tertio quoque die singulis, aliis diebus nullis.
Tertiana legitima.

b. Tertiana quotidie revertens, cum paroxysmis inequalibus, alternis similibus.
Tertiana duplex vel duplicana.

c. Tertiana alternis diebus revertens, paroxysmis eodem die binis.
Tertiana duplicata.

d. Tertiana quotidie revertens, cum paroxysmis altero die binis, altero unico tantum.
Tertiana triplex.
Semitertiana primi ordinis.
Hemitritæus. Lommii Observ Med Libri. Tres. p. 22.
Eller Observ. de Cog. et Cur. Morb. Sect. 4. p. 83.

e. Tertiana quotidie revertens, interposita remissione inter diem imparem et parem magis, inter parem et imparem minus, notabili.
Hemitritæus Cullen, &c.†
Semitertiana.
Semitertiana secundi ordinis.
Amphemerina hemitritæa.
Amphemerina pseudo hemitritæa.

f. Tertiana cum paroxysmis quotidie binis, alternis diebus similibus.
Tertiana quadruplex. Tulpii. Observ. Med. lib. 14, c. 46.

2. Interposita remissione tantum.
Tritæophya.
Tritæa.

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* I regard regular intermittents as varying only in the length and recurrence of the paroxysm. According to the arrangement I follow, Dr. Cullen's third variety, comes under the head of irregular intermittents If the symptoms, alluded to by him, disturb the course of the paroxysm, the fever is irregular; and if not, they do not deserve to be mentioned in a nosological character. If coma or spasm deserve to be mentioned, why not delirium or syncope? Of this, it is evident, there would be no end. His fourth and fifth varieties, as far as I can judge, have no place in a system of nosology.

† The same word being introduced under different definitions, arises from authors using them in different senses.

Hemitritæa.
Tertianæ remittentes et continuæ.
Tertianæ subintrantes, proportionatæ, subcontinuæ.
Quotidiana deceptiva.
Amphemerina semiquintana.
Tritæophya deceptiva.*

II. Tertiana Irregularis.†

1. Tertiana cum recursu paroxysmi irregulari
Tertian erratica.
Tertiana erratica vaga.

2. Tertiana cum decursu paroxysmi irregulari.

Variat,

A. Ordine paroxysmi graduum perturbato.‡
Dr. Cleghorn on the Diseases of Minorca. Senac de Febribus. Frank Epitome de Cur. Hom. Morb. Jackson on the Fevers of Jamaica. Burserii Instit. Med. Pract. Schenkii Observ. Med. rariores.

B. Paroxysmis, vel nonnullis paroxysmi gradibus, partem corporis tantum afficientibus.§
Vogelii Prælect. Acad. de Cog et Cur. Morb. Sauvagesii Nosol. Method.

C. Paroxysmis symptomatibus gravioribus ‖ perturbatis.¶
Elodes, Assodes, Syncopales. &c.
Stork Anni Medici. Dr. Cleghorn on the Diseases of Minorca. Sir John Pringle's Obs. on the Dis. of the Army. Dr. Rush's Med. Obs. and Inq. Mr. Clark, Med. Obs. and Inq. vol. 4. Transactions of a Society for the Improvement of Med. and Surg. Knowledge for 1798. Mr. Bain Ed. Med. Ess. vol. vi. Mr. Davidson Med. Comment, vol. 15.

GENUS III. QUARTANA.

Paroxysmi similes intervallo septuaginta duarum circiter horarum. Accessionibus pomeridianis.

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* The varieties which Dr. Cullen enumerates from Torti, characterised by particular symptoms, I omit for a reason just given.

† Vol. i. p. 61. ‡ Vol. i. p. 62. § Vol. i. p. 62, 63.

‖ Such symptoms sometimes assume the intermitting, and particularly the tertian form, unaccompanied by fever. Stork Anni. Medici. Dr. Rush's Med. Obs. and Inq. Dr. Chapman Med. Comment. vol. i. Strack de Febribus.

¶ Vol. i. p. 63, 64.

I. Quartana Regularis.

1. Interposita intermissione.

Variat,

A. Paroxysmi duratione.

a. Quartana paroxysmis haud ultra horas duodecem extensis.
Quartana legitima.
Quartana vera.

b. Quartana paroxysmis ultra horas duodecem extensis.
Quartana Notha vel spuria.

B. Paroxysmi recursu.

a. Quartana cum paroxysmis quarto quoque die singulis; aliis diebus nullis.
Quartana legitima.

b. Quartana cum paroxysmis quarto quoque die binis; aliis diebus nullis.
Quartana duplicata.

c. Quartana cum paroxysmis quarto quoque die tribus; aliis diebus nullis.
Quartana triplicata.

d. Quartana quæ ex quatuor diebus tertium tantum a febre vacuum habet, paroxysmis quarto quoque die similibus.
Quartana duplex.

e. Quartana quotidie accedens, paroxysmis quarto quoque die similibus.
Quartana triplex.

2. Interposita remissione tantum.
Tetartophia.
Quartana remittens.

II. Quartana Irregularis.

2. Quartana cum recursu paroxysmi irregulari.
Quartana erratica.
Quartana erratica vaga.

1. Quartana cum decursu paroxysmi irregulari.*

Variat,

A. Ordine paroxysmi graduum perturbato.

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* Vol. p. 61. et seq.

B. Paroxysmis, vel nonnullis paroxysmi gradibus, partem corporis tantum afficientibus.

C. Paroxysmis symptomatibus gravioribus pertubatis.

GENUS IV. INTERMITTENS LONGA.*

Paroxyſmi ſimiles, intervallo plus quam ſeptuaginta duarum horarum.

Quintana. Van Swieten, Comment. in Aph. Boerh. Burserii Inst. Med. Pract.
Septana. Boerhaav. Aph. Burserii Inst. Med. Pract.
Octana, &c. Menstruæ, Bimenstruæ, &c. Annuæ.†

ORDO II.

Febres continuæ.

Febres idiopathicæ ſine intermiſſione, et non miaſmate paludum ortæ, ſed cum remiſſionibus et exacerbationibus, parum licet notabilibus, perſtantes.‡

GENUS. I. SYNOCHA.

Febris continua cum calore plurimum aucto, pulsu frequente, valido et duro, urina rubra, sensorii functionibus parum turbatis.§

Febris acuta sanguinea,

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* Many regard Intermittents of a longer interval than the quartan as varieties of this fever and the tertian see Dr. Cullen's Synop. Nos. Method. vol. 2. Genus 2. But this opinion being hypothetical, can hardly be admitted as a proper foundation for nosological arrangement. Besides there appears to be little doubt of the existence of regular agues of a longer type than the quartan. I have seen a septan. The fever for several months returned every Thursday. I could not learn from the patient or his attendants that it had ever shewn any tendency to assume either the tertian or quartan type.

† The existence of fevers with such intervals as some of those mentioned under this genus is very doubtful. See vol 1. p. 46

‡ Vol. 1. from p. 14. to p. 27.

§ Vol. 1. p. 14. 15.

Febris continua non putris,
Diaria,
Febris inflammatoria.

GENUS II. TYPHUS.

Febris continua, cum calore parum aucto, pulſu parvo, debili, plerumque frequente, urina parum mutata, ſenſorii functionibus plurimum turbatis, viribus multum imminutis. *

Febris maligna,
Febris pestilens,
Febris lenta nervosa,
Febris putrida nervosa,
Febris putrida biliosa,
Febris contagiosa,
Typhus nervosus,
Tritæophya typhodes,
Ephemera Britannica,
Sudor Anglicus,
Hydronosus.

GENUS III. SYNOCHUS.

Febris continua, ex Synocha et typho compoſita initio ſynocha, progreſſu et verſus finem, typhus. †

Lenta,
Febris continua putrida,
Febris continua epidemica,
Synochus Sanguineus,
Synochus Sudatorius,
Synochus soporosus,
Synochus ardens.

Species 1. *Synochus ſimplex.* ‡

Synochus ſine eruptione.

Species 2. *Synochus petechialis.* ||

Synochus, incerto morbi die, plerumque poſt varia debili-

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* Vol. 1. p. 15. 16.
† Vol. 1. p. 16. & seq.
‡ Vol. 1. p. 16.
|| Vol. 1. p. 17.

tatis ſigna, apparent maculæ parvæ, rubræ circulares, minime eminentes, per cutem, præcipue colli et pectoris, ſparſæ.

Febris petechialis,
Febris petechialis epidemica,
Febris petechialis maligna,
Febris petechialis nervosa,
Febris peticularis,
Febris petechizans.

Species 3. *Synochus Miliaris.*

Synochus, cum anxietate, frequenti ſuſpirio, ſudore olido, et punctionibus cutis. Incerto morbi die erumpunt papulæ rubræ, exiguæ, diſcretiæ, per totam cutem, præter faciem, crebræ, quarum apices poſt unum vel alterum diem, puſtulas minimas albas brevi manentes, oſtendunt. *

Miliaria,
Miliaris,
Febris miliaris,
Febris purpurata rubra et alba miliaris,
Febris purpurea.

Species 4. *Synochus Aphthoſus.* †

Synochus. Lingua tumidiuſcula, linguæ et faucium color purpuraſcens; eſcharæ in faucibus, et ad linguæ margines, primum comparentes, os internum totum demum occupantes, albidæ, aliquando diſcretæ, ſæpe coaleſcentes, abraſæ cito renaſcentes, et incertum tempus manentes.

Aphtha,
Febris Aphthoſa.

Species 5. *Synochus Veſicularis.* ‡

Synochus. Eruptio veſiculorum, cutem et nonnunquam os

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* Vol. 1. p. 17. to 20. † Vol. 1. p. 20. 21. ‡ Vol. 1. p. 24. 25. 26.

internum * occupans, avellanæ magnitudinis, ſero flavo turgentium, tres vel quatuor dies manentium.†

Pemphigus
Pemphigus major,
Morta,
Febris Vesicularis vel vesicatoria,
Febris bullosa,
Exanthemata serosa,
Febris Pemphygodes.

Species 6. Synochus Eryſipelatoſus.‡

Synochus, plerumque cum ſomnolentia ſæpe cum delirio. In aliqua cutis parte, ſæpius in facie, erythema.

Erysipelas,
Febris erysipelacea,
Febris erysipelatosa,
Erysipelas typhodes,
Erysipelas pestilens,
Erysipelas Rosa,
Erysipelas Zoster,
Zona,
Zona ignea,
Herpes Zoster.

ORDO. III.

Exanthemata.§

Morbi contagioſi, ſemel tantum in decurſu vitæ, aliquem afficientes, cum frebre idiopathica, incipientes; definito tempore apparent puſtulæ, ſæpe plures, exiguæ per cutem ſparſæ.

GENUS I. VARIOLA.

Exanthema, cum vomitu et ex epigaſtrio preſſo dolore. Ter-

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* This eruption frequently spreads along the whole alimentary canal, but it is only its appearance in the mouth which can assist the diagnosis. vol. 1. p. 343 & seq.

† Vol. 1. p. 341, 342, 343. ‡ Vol. 1. p. 22. 23. 24.
§ Vol. 1. p. 17. et seq. & 27 & 28.

tio die incipit et quinto finitur, eruptio pustularum, quæ spatio octo dierum in suppurationem, et in crustas demum abeunt, sæpe cicatrices depressas sive foveolas in cute relinquentes.

Febris variolosa.

Species 1. *Variola Regularis.*

Varietas 1. *Variola Discreta.*

Variola cum pustulis paucis, discretis, circumscriptione circularibus, turgidis, febre, eruptione facta, protinus cessante.

Variolæ discretæ simplices,
Variolæ discretæ crystallinæ,
Variolæ discretæ vesiculare,
Variolæ discretæ verrucosæ,
Variolæ discretæ siliquosæ,*

Varietas 2. *Variola Confluens.*

Variola cum pustulis numerosis, confluentibus, circumscriptione irregularibus, flaccidis, parum elevatis, febre post eruptionem perstante.

Variolæ confluentes simplices, crystallinæ, vesiculares, verrucosæ, siliquosæ.
Variolæ confluentes malignæ,
Variolæ confluentes cohærentes,
Variolæ confluentes nigræ,
Variolæ sanguineæ,
Variolæ confluentes corymbosæ. †

Species 2. *Variola Irregularis.* ‡

Variola decursu irregulari, et symptomatibus gravioribus.

Variolæ discretæ anomalæ,
Variolæ confluentes anomalæ.

GENUS. II. VARICELLA.

Exanthema. Papulæ post brevem febriculam erumpentes, in

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* Vol. 1. p. 372. † Vol. 1. p. 374. ‡ Vol. 1. p. 386. et seq.

puſtulas variolæ ſimiles, ſed vix in ſuppurationem euntes: poſt paucos dies in ſquamulas, nulla cicatrice relicta, deſinentes.

Variola Lymphatica.

1.* *Varicella Lenticularis.*—Willan. †

Species

Species 2. *Varicella Conoidalis.* Swine-pox. Heberden. ‡

Species 3. *Varicella Globata.*—Willan.

GENUS III. RUBEOLA.

Exanthema. Sternutatio, epiphora, et tuſſis ſicca, rauca. Quarto die vel paulo ſerius, erumpunt papulæ exiguæ, confertæ, vix eminentes, et poſt tres dies in ſquamulas furfuraceas minimas abeuntes.

Morbilli,
Febris morbillosa.

Species 1. *Rubeola Regularis.* ||

Rubeola vulgaris,
Morbilli regulares.

Species 2. *Rubeola Irregularis.* ¶

Rubeola decurſu irregulari et ſymptomatibus gravioribus.

Rubeola anomala,
Morbilli anomali.

GENUS IV. SCARLATINA.

Exanthema. Quarto morbi die, facies aliquantum tumens; ſimul in cute paſſim rubor floridus, maculis amplis tandem coaleſcentibus, poſt tres dies in ſquamulas furfuraceas abiens; ſuperveniente dein ſæpe anaſarca.

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* Vol. 1. p. 425. † On Vaccine Inoculation. ‡ Med. Trans. vol. 1.
|| Vol. p. 441. ¶ Vol. 1 p. 441. 442. 443.

Species 1. *Scarlatina Simplex.*

Scarlatina nulla comitante cynanche,
Febris Scarlatina.

Species 2. *Scarlatina Cynanchica.*

Scarlatina cum cynanche ulcerosa,
Scarlatina anginosa.

GENUS V. PESTIS. *

Exanthema, cum summa debilitate. Incerto morbi die, eruptio bubonum vel anthracum.

Febris pestilentialis.

Species 1. † *Pestis sine eruptione.*

Pestis interna.

Species 2. *Pestis cum eruptione.*

Pestis Vulgaris,
Pestis benigna.

CLASSIS II.

FEBRES SYMPTOMATICÆ. ‡

Morbi locales primarii, calore aucto, pulsu frequente.

ORDO I.

Phlegmasiæ. §

Febres symptomaticæ, pulsu duro; quibus est pro morbo

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* The plague perhaps would be more properly arranged as a species of synochus. Cullen Synop. Nos. Method. tom. 2. p. 130. 131. Edit. 1785.

† Vol. I. p. 489 & seq. ‡ Vol. 1. p. 28. § Vol. 1. p. 34. 35. 36.

locali, vel inflammatio externa, vel dolor topicus ſimul læſa partis internæ functione.

GENUS I. PHLEGMON.*

Phlegmaſia, cum rubore externo vivido, tumore circumſcripto, in faſtigium plerumque elevato, ſæpe in apoſtema, raro in ſphacelum,† abeunte; dolore ſæpe pulſatili.

Phlegmone,
Inflammatio,
Furunculus,
Carbo,
Varus,
Carbunculus.

GENUS II. ERYSIPELAS.‡

Phlegmaſia, cum rubore externo, premendo evaneſcente; ambitu inequali, ſerpente; tumore vix evidente, in cuticulæ ſquamulas in phlyctænas vel veſiculas nonnunquam in ſphacelum, raro in apoſtema abeunte; dolore urente.

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* Vol. 1. p. 29. vol. 2. p. 84. 85. 86.

† (Vol. 2. p. 84 & 85.) Apostema and sphacelus are arranged by Dr. Cullen as sequelæ of Phlogosis, his seventh genus, including Phlegmon and Erysipelas, or, as he terms it, Phlogosis erythema. The nature of nosological arrangement seems hardly to admit of any enumeration of the sequelæ of disease. If the sequela ever appears as a distinct disease, an instance of which we shall presently have occasion to consider, it ought to have its own place in a nosological system; if not, it only deserves to be mentioned as far as it contributes to distinguish the disease to which it belongs, and must have a place in the character of that disease. As it is one of the distinguishing marks of Phlegmon and Erysipelas, that the former tends most to abscess, the latter to Sphacelus, I have in their characters noticed this mark of distinction, which gives an opportunity of introducing apostema and sphacelus. To introduce any description of them, however, would render the definition too long They can, therefore, only be mentioned in the same way as delirium, convulsions, or any other accident of disease; that is, as terms which the reader is supposed to understand, and whose explanation belongs to a system of practice. In this way Dr. Cullen himself uses apostema before he has defined it in his character of phlegmon.

‡ Vol. 1. p. 29. 30. 31. vol. 2. p. 89.

Erythema,
Hieropyr,
Anthrax,
Carbo, *
Carbunculus,
Erythema gangrenosum,
Pernio,
Combustura,
Encausis,
Intertrigo,
Psydracia.

GENUS III. OPHTHALMIA.

Phlegmasia, cum dolore et sæpe rubore oculi, lucis intolerantia cum lacrimatione.†

Ophthalmitis,
Inflammatio oculorum,
Ophthalmia choroidea,
Ophthalmia tenebricosa.

GENUS IV. OTITIS. ‡

Phlegmasia, cum dolore auris internæ, nonnunquam cum delirio.

GENUS V. PHRENITIS §.

Phlegmasia, cum dolore capitis, rubore faciei et oculorum, lucis et soni intolerantia, pervigiliis delirio feroce vel typhomania.

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* Carbo and carbunculus are arranged both under phlegmon and erysipelas, having been applied to diseases which come under both these genera.

† For the cause of the alterations here made in Dr. Cullen's definition and arrangement of the synonyms. See vol. 2. p. 115, 116, 117.

‡ Vol. 2, p. 138, 139.

§ Vol. 2, p. 100, 101. In the foregoing work I have arranged phrenitis before ophthalmia and otitis, because in the two last, the first often supervenes. In a nosological system, this is of no weight in influencing the arrangement; and ophthalmia and otitis being more external affections, are arranged before phrenitis. From what is said above (vol. 2. p. 101), the reader will see why I omit many of the synonyms enumerated by Dr. Cullen.

Phrenitis vera,
Phrenismus,
Siriasis,
Cephalalgia inflammatoria.

GENUS VI. CYNANCHE.

Phlegmasia cum pulsu plerumque valido, nonnunquam debili, cum dolore faucium, respiratione vel deglutitione difficili, cum angustiæ in faucibus sensu.*

Angina,
Angina inflammatoria.

Species 1. *Cynanche Tonsillaris.*

Cynanche cum pulsu valido, membranam faucium et pharyngis mucosam, præcipue tonsillas, tumore et rubore afficiens, deglutitione difficili nonnunquam dolentissima.

Cynanche pharyngea,
Angina inflammatoria.†

Species 2. *Cynanche Maligna.*

Cynanche, tonsillas et membranam faucium mucosam afficiens tumore, rubore, et crustis mucosis coloris albescentis vel cineritii, serpentibus et ulcera tegentibus; pulsu debili et exanthematibus.

Cynanche ulcerosa,
Cynanche gangrenosa,
Ulcera faucium et gutturis anginosa et lethalia,
Garotillo,
Angina ulcerosa,
Angina epidemica,
Angina gangrenosa,
Angina maligna,
Febris epidemica cum angina ulcusculosa.

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* In the 142d and following pages of the second volume, the reader will find the reasons for the alterations made in Dr. Cullen's character and division of cynanche.

† This term has been used by different writers to express both cynanche in general, and both the cynanche tonsillaris, and trachealis in particular.

Species 3. *Cynanche Trachealis.*

Cynanche cum respiratione difficili, inspiratione strepente, voce rauca, tussi clangosa, tumore fere nullo in faucibus apparente, deglutitione parum difficili; pulsu valido.

Cynanche laryngea,
Angina inflammatoria,
Angina latens et difficilis,
Angina interna,
Angina perniciosa,
Cynanche stridula,
Suffocatio stridula,
Morbus strangulatorius,
Angina poliposa vel membranacea,
Catarrhus suffocativus,
Morbus truculentus infantum,
Angina inflammatoria infantum.*

Species 4. *Cynanche Parotidea.*

Cynanche cum tumore externo parotidum et maxillarum glandularum magno; respiratione et deglutitione parum læsis; febre synocha plerumque leni.

Angina externa,
Catarrhus Bellinsulanus.

GENUS VII. PNEUMONIA.

Phlegmasia cum dyspnœa, tussi, plerumque cum dolore in quadam thoracis parte, sæpe in vomicam, nonnunquam in empyema, abiens.†

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* I have had occasion to observe above, that Dr. Cullen did not distinguish between the cynanche trachealis, and asthma infantum. The following synonyms arranged by him under cynanche trachealis, appear to belong to the latter disease. Asthma infantum (vol. 2, p. 208). Millar on the Asthma and Chin-cough. Asthma infantum spasmodicum (vol. 2. p. 212). Rush, Dissertation, Lond. 1770. Angina epidemica (vol. 2, p. 207). Molloy in Rutty's History of the Weather. Angina inflammatoria infantum (vol. 2, p. 22). Russel, Œconomy of Nature, &c.

† I have found it necessary to propose considerable alterations on Dr. Cullen's character of pneumonia, and to make its species altogether

Species 1. *Pneumonia Vera.*

Pneumonia cum ſymptomatibus gravioribus et decurſu celeriori.

Febris pneumonica,
Peripneumonia, vol. 2. p. 246, 247.
Peripneumonia pura vel vera,
Pleuritis, vol. 2. p. 248. Pleuritis vera, Pleuritis pulmonis,
Paraphrenesis,
Paraphrenitis, vol. 2, p. 250, 251.
Diaphragmitis,
Pleuripneumonia, peripneumo-pleuritis,
Pleuro-peripneumonia, vol. 2. p. 246.
Pleuritis dorsalis,
Pleuritis mediastini,
Mediastina,
Pleuritis pericardii,
Parapleuritis,
Pleurodyne,
Paraphrenesis pleuritica,
Paraphrenesis hepatica,
Erysipelas pulmonum, vol. 2, p. 253.
Carditis, vol. 2, p. 252.
Pericarditis, vol. 2, p. 252.
Carditis spontanea.

Species 2. *Pneumonia Notha.*

Pneumonia cum ſymptomatibus lenioribus, et excretione bronchiarum plurimum aucta.

Peripneumonia notha,
Peripneumonia catarrhalis,

Species 3. *Pneumonia Phthiſica.*

Pneumonia cum decurſu tardiori, emaciatione et debilitate, demum febre hectica, et plerumque expectoratione purulenta.*

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different from those admitted by him; the reasons for which will appear from what is said above (vol. 2, p. 246 et seq.) of the divisions of pneumonia, from the note to phlegmon, and from what I shall presently have occasion to say of pneumonia phthisica.

* Dr. Cullen arranges Phthisis as a sequela of hæmoptysis. This

Phthisis,
Phthisis pulmonalis,
Affectio phthisica,
Tabes pulmonalis,
Phthisis incipiens,
Phthisis confirmata,
Phthisis sicca,
Phthisis humida.

GENUS VIII. PERITONITIS.

Phlegmasia cum dolore abdominis, corpore erecto et pressura aucto;* absque propriis aliarum phlegmasiarum abdominalium signis.

Epiploitis,
Omentitis,
Omenti inflammatio,
Mesenteritis,
Enteritis mesenterica.†

GENUS IX. GASTRITIS.

Phlegmasia cum pulsu debili, anxietate, in epigastrio ardore et dolore, pressura vel ingestibus quibuslibet aucto, vomendi cupiditate, ingestis protinus rejectis, singultu.

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is not only objectionable for the reasons given above, (see Phlegmon) but because in the greater number of cases, Phthisis is not preceded by Hæmoptysis; and is never the immediate consequence of it. The irritation attending the rupture of the vessel must produce inflammation before Phthisis can take place. (vol. 2. p. 457.) It is not only a distinct disease, but one of the first importance, and is surely very improperly introduced into a nosological system, merely as the sequela of another. I have explained above why I have not adopted Dr. Cullen's Division of Phthisis.

* I have here, and in the characters of gastritis interitis, and the other abdominal inflammations, introduced the circumstance of the pain being increased by external pressure, one of the best diagnostics of these diseases.

† I have arranged all the above terms as synonyms of Peritonitis, because in inflammation of the peritoneum, we do not possess, as implied by these terms, the means of ascertaining the particular seat of the inflammation.

Ventriculi inflammatio,
Febris stomachica inflammatoria.

Species 1. *Gaſtritis Phlegmonodea.* *

Gastritis symptomatibus gravioribus,
Gastritis legitima,
Gastritis erysipelatosa, Sauvagesius, Cullen.
Cardialgia inflammatoria.

Species 2. *Gaſtritis Erythematica.*

Gaſtritis ſymptomatibus lenioribus, rubore eryſipelatoſo in faucibus apparente.

GENUS. X. ENTERITIS.

Phlegmaſia cum pulſu debili; dolore abdominis pungente, tendente, preſſura aucto, partes circa umbilicum torquente; vomitu; alvo pertinaciter adſtricta.

Intestinorum inflammatio,
Febris intestinorum inflammatoria.

Species 1. † *Enteritis Phlegmonodea.*

Enteritis ſymptomatibus gravioribus, cum vomitu et alvo aſtricta.

Enteritis iliaca,
Enteritis colica.

Species 2. *Enteritis Erythematica.*

Enteritis ſymptomatibus lenioribus, ſine vomitu, et cum diarrhœa.

GENUS XI. HEPATITIS.

Phlegmaſia cum hypochondrii dextri tenſione et dolore preſſura aucto, ſæpe pungente pleuritici inſtar, ſæpius obtuſo;

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* Vol. 2. p. 293. † Vol. 2. p. 306, 307.

dolore ad claviculam et ſummum humeri dextri; decubitu in ſiniſtrum latus difficili; dyſpnœa; tuſſi ſicca; vomitu; ſingultu.*

Hepatitis erysipelatosa,
Hepatitis pleuritica,
Pleuritis hepatica,
Hepatitis cystica.

Species 1. *Hepatitis Acuta.*

Hepatitis ſymptomatibus gravioribus et decurſu celeriori.

Species 2. *Hepatitis Chronica.*

Hepatitis ſymptomatibus lenioribus et decurſu tardiore.†

GENUS XII. SPLENITIS.

Phlegmaſia cum hypochondrii ſiniſtri tenſione, calore, tumore, et dolore preſſura aucto; abſque ſignis nephritidis,

Lienis inflammatio,
Splenitis phlegmonodea,
Pleuritis splenica,
Splenalgia suppuratoria.

GENUS XIII. NEPHRITIS.

Phlegmaſia cum dolore in regione renis, ſæpe uretris iter ſequente, mictione frequente urinæ, vel tenuis decoloris, vel ruberrimæ, vomitu, cruris ſtupore, teſticuli ejuſdem lateris retractione aut dolore.

Nephritis vera,‡

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* Vol. 2 p. 318, 319.

† Dr. Cullen gives a long character of chronic hepatitis, but all that is essential in it appears to me to be comprehended in the character here given. There is a species of chronic hepatitis attended with a low degree of fever.

‡ In this, as in other instances, I have omitted any enumeration of complicated and symptomatic diseases, and avoided divisions founded on the causes of disease, both appearing to be inconsistent with the nature of nosology. See vol. 1. p. 2 and 3.

GENUS XIV. CYSTITIS.

Phlegmasia cum hypogastrii tumore et dolore, pressura aucto, mictione frequente dolorifica, vel ischuria, tenesmo.

Inflammatio vesicæ,
Cystitis spontanea.

GENUS XV. HYSTERITIS.

Phlegmasia cum hypogastrii calore, tensione, tumore et dolore pressura aucto; ore uteri tactu dolente; vomitu.

Metritis,
Inflammatio, et febris, uterina.

GENUS XVI. RHEUMATISMUS. *

Phlegmasia cum dolore circa articulos, musculorum tractum sequente, sub motu præsertim aucto,† genua et reliquos majores, potius quam pedum vel manuum articulos, infestante, calore externo aucto. ‡

Rheumatismus,
Dolores rheumatici et arthritici,
Myositis,
Lumbago,
Ischias,
Pleurodyne,
Lumbago rheumatica,
Nephralgia rheumatica,
Ischias rheumaticum,
Pleurodyne rheumatica,
Pleuritis spuria.

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* I omit Arthrodynia, arranged by Dr. Cullen as a sequela of rheumatism, both for reasons above mentioned, (see Phlegmon) and because it is never a febrile disease.

† Vol. 2. p. 334.

‡ The first part of Dr. Cullen's definition is omitted as unnecessary. There is always, it is evident, some objection to making the causes of a disease part of its nosological character.

GENUS XVII. PODAGRA.

Phlegmaſia cum dolore ad articulum, plerumque pedis pollici, certe pedum et manuum juncturis, potiſſimum infeſto, præeunte plerumque ventriculi affectione inſolita; per intervalla revertente, et ſæpe cum ventriculi, vel aliarum internarum partium affectionibus alternante.*

Febris podagrica,
Arthritis,
Dolor arthriticus,
Dolor podagricus.

Species 1. *Podagra Regularis.*

Podagra cum inflammatione artuum ſatis vehementi, per aliquos dies perſtante, et paulatim cum tumore, pruritu, et deſquamatione partis, recedente.

Arthritis podagra,
Arthritis rachialgica,
Arthritis æstiva.

Species 2. *Podagra Atonica.*

Podagra cum ventriculi, vel alius partis internæ, atonia, et vel ſine expectata aut ſolita artuum inflammatione, vel cum doloribus artuum lenibus tantum et fugacibus, et cum dyſpepſia vel aliis atoniæ ſymptomatibus, ſubito ſæpe alternantibus.

Arthritis melancholica,
Arthritis symptomatica,
Arthritis hiematis,
Arthritis anomala,
Arthritis chlorotica,
Arthritis asthmatica.

Species 3. † *Podagra Retrograda.*

Podagra cum inflammatione artuum ſubito recedente, et ventriculi vel alius partis internæ atonia mox inſecuta.

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* The first part of Dr. Cullen's character of gout is omitted for the same reason as the first part of that of rheumatism was omitted.

† Dr. Cullen makes a fourth species of gout, the Podagra aberrans. I have above offered my reasons for omitting this species. vol. 2. p. 363, 364.

GENUS XVIII. ARTHROPUOSIS.

Phlegmasia cum doloribus artuum vel partium masculosarum sæpe post contusionem, profundis, obtusis diuturnis; tumor vel nullus vel modicus et diffusus; inflammatio externa nulla; febris primum lenis, tandem hectica, et simul partis apostema. *

Lumbago psoadica,
Lumbago apostematosa,
Lumbago ab arthrocace,
Ischias ex abscessu,
Morbus conarius.

ORDO. II.

Hæmorrhagiæ. †

Febres symptomaticæ, quibus est pro morbo locali, sanguinis fluxus absque vi externa.

Sanguifluxus.

GENUS I. EPISTAXIS. ‡

Hæmorrhagia cum capitis dolore et gravitate; faciei rubore; profusione sanguinis e naribus.

Hæmorrhagia,
Hæmorrhagia narium,
Hæmorrhagia plethorica.

---

* I have not thought it necessary to consider this disease separately in the preceding treatise. Previous to the formation of matter, what was said of the treatment of the phlegmasia in general, is in all respects applicable to it. After matter is formed it comes under the care of the surgeon.

† Vol. 1. p. 36.

‡ I follow Dr. Cullen in arranging this and some of the following hemorrhagies, which are evidently local diseases, among the phlegmasiæ. The observations made on the nosological arrangement of simple inflammations are altogether applicable to simple hemorrhagies. Vol. 1. p. 6 & seq.

Species 1. *Epiſtaxis Juniorum.*

Epiſtaxis, faciei colore florido.

Species 2. *Epiſtaxis Senum.*

Epiſtaxis, faciei colore purpureo. *

GENUS II. HÆMOPTYSIS.

Hæmorrhagia cum genarum rubore; moleſtiæ aut doloris et aliquando caloris, in pectore ſenſu; dyſpnœa; titillatione faucium; tuſſi aut tuſſicula ſanguinem floridum, ſæpe ſpumoſum rejiciente.

Hæmoptoe,
Sanguinis fluxus ex pulmonibus.

Species 1. *Hæmoptyſis Plethorica.*

Hæmoptyſis nulla prægreſſa tuſſi.

Hæmoptysis accidentalis,
Hæmoptysis habitualis.

Species 2. *Hæmoptyſis Phthiſica.*

Hæmoptyſis poſt tuſſim diuturnam.

Hæmoptoe,
Hæmoptysis ex tuberculo pulmonum.

Species 3. *Hæmoptyſis Calculoſa.* ‡

Hæmoptyſis, rejectis ſimul moleculis calculoſis.

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* Epistaxis. Variat ratione etatis, Epistaxis *(juniorum)* cum signis plethoræ arteriosæ. Epistaxis (senum) cum signis plethoræ venosæ. Cullen Synop. Nos. Method. Genus 36.

† It would appear that a variation of symptoms is the only proper foundation for nosological distinctions. I have therefore only admitted three of Dr. Cullen's five species of hæmoptysis, and

GENUS III. HÆMORRHOIS.

Hæmorrhagia cum capitis gravitate vel dolore; vertigine; lumborum dolore; dolore ani; circa anum tuberculis lividis dolentibus, e quibus plerumque profluit ſanguis, qui aliquando etiam, nullo tumore apparente, ex ano ſtillat.

Hæmorrhoidalis fluxus,
Hæmorrhoides,
Leucorrhois,
Proctalgia hæmorrhoidalis.

Species 1. *Hæmorrhois Tumens.*

Hæmorrhois externa a mariſcis,

Mariſca,

Variat.

A. Cruenta,

Hæmorrhoides ordinatæ,
Hæmorrhoides excedentes,
Hæmorrhois polyposa,

B. Mucosa,

Hæmorrhoides decoloratæ, albæ, mucidæ.
Proctalgia intertriginosa.

Species 2. *Hæmorrhois Procidens.*

Hæmorrhois externa cum procidentia ani.

Hæmorrhois ab exania.

Species 3. *Hæmorrhois Fluens.*

Hæmorrhois interna abſque tumore externo vel procidentia ani.

Species 4. *Hæmorrhois Cæca.* *

Hæmorrhois cum dolore et tumore ani ſine profuſione ſanguinis.

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have proposed some change in his characters of these.

* This disease, in which there is no flow of blood, is but ill arranged under the character of hemorrhagy. It cannot, however, be separated

Hæmorrhoides cæcæ,
Proctalgia inflammatoria.

GENUS IV. MENORRHAGIÆ.

Hæmorrhagia cum dorſi, lumborum, ventris, parturientium inſtar doloribus, menſtruorum copioſiori, vel ſanguinis e vagina præter ordinem, fluxu.

Metrorrhagia,
Uteri hæmorrhagia,
Hæmorrhagia uterina,
Fluor uterini sanguinis,
Convulsio uteri,
Abortus.

Species 1. *Menorrhagia Rubra.*

Menorrhagia cruenta,
Menorrhagia immodica,
Menorrhagia stillatitia,
Menorrhagia gravidarum,
Abortus effluxio,
Abortus ab uteri laxitate,
Menorrhagia lochialis,
Menorrhagia ex hysteroptosi,
Menorrhagia ulcerosa.

Species 2.* *Menorrhagia Alba.*

Menorrhagia serosa,
Leucorrhæa,
Menorrhagia decolor,
Leucorrhæa gravidarum,
Leucorrhæa nabothi.

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from other species of piles, which it in all respects resembles, except that it is unaccompanied by any discharge. This is one of many instances in which an insurmountable obstacle seems opposed to the attainment of nosological accuracy.

* Of Dr. Cullen's six species of menorrhagia, the two here given appear to me to be the only ones which nosology admits of. An observation similar to that made on the 4th species of hæmorrhois applies to the 2d species of menorrhagia.

GENUS V. HÆMATEMESIS.*

Hæmorrhagia cum regionis ventriculi tenſione vel dolore, ſanguinis vomitione.

Stomacace.

GENUS VI. HÆMATURIA.

Hæmorrhagia cum dorſi et lumborum dolore, et ſanguinis mictura.

ORDO III.

Profluvia.†

Febres ſymptomaticæ, quibus eſt pro morbo locali, excretio aucta naturaliter non rubra.

GENUS I. CATARRHUS.

Profluvium cum muci ex glandulis membranæ narium, faucium vel bronchiorum excretione aucta.

Coryza,
Rheuma,
Tussis,
Tussis catarrhalis et rheumatica.

Species 1.

Catarrhus cum ſymptomatibus lenioribus.

Catarrhus benignus vel pectoreus,
Coryza catarrhalis, vel febricosa, vel phlegmatorrhagia,
Tussis catarrhalis.

Species 2.‡

Catarrhus cum ſymptomatibus gravioribus.

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* The hæmatemesis, hæmaturia, cystirrhagia, and some other hemorrhagies enumerated by writers, Dr. Cullen regards as always symptomatic. The two first I have arranged as genera, because I have seen them idiopathic.

† Vol. 1, p. 36.

‡ For my reasons for the alterations here made on Dr. Cullen's definitions of the species of Catarrh, see the note to nephritis vera.

Catarrhus epidemicus,
Rheuma epidemicum,
Synocha catarrhalis.

GENUS II. DYSENTERIA.

Profluvium cum dejectionibus frequentibus, mucosis vel sanguinolentibus; retentis plerumque fœcibus alvinis; torminis; tenesmo,*

Dysenteria epidemica,
Dysenteria castrensis,
Dysenteria carnosa,
Dysenteria intermittens,
Dysenteria alba,
Dysenteria benigna.

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* For my reason for not admitting Dr. Cullen's division of dysentery, see the note to nephritis vera.

FINIS.

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